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NATURAL ZOOLOGICAL PARK

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HAND-LIST

OF

SEALS, MORSES, SEA-LIONS,

AND

SEA-BEARS

IN THE

BRITISH MUSEUM. *(Natural History)*

Department of Zoology

BY

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[THIRTY PLATES OF SKULLS

SMITHSONIAN

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NATIONAL ZOOLOGICAL PARK

INSTITUTION

LONDON:

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PREFACE.

IN this Hand-list it is proposed to give an account of all the specimens of the Seals, Morses, Sea-lions, and Sea-bears in the British Museum. Many of these have been described in :—

1. The Catalogue of Specimens of Mammalia in the British Museum. By Dr. J. E. Gray. Part II. Seals. 12mo. 1850. Woodcuts of skulls.
2. The Catalogue of Seals and Whales in the British Museum. By Dr. J. E. Gray. 8vo. 1866. Woodcuts of skulls.
3. The Supplement to the Catalogue of Seals and Whales in the British Museum. By Dr. J. E. Gray. 8vo. 1871.

The new species discovered, or improvements made in the arrangement of the *Pinnipedia*, since the publication of these Catalogues have been adopted, and references made to the works in which such species have been described.

When any of the specimens have served as the types of a description or figure of a species in a scientific work, reference is made to where the description and figure are to be found.

Whenever a specimen has been presented or obtained directly from a collector, the name of the presenter or collector and the habitat sent with the specimen have been recorded; but the greater number of the specimens have been obtained from dealers, with only the most general habitats.

The condition in which the specimen is preserved, its size, and the age and sex, when known with certainty, are recorded.

JOHN EDWARD GRAY.

British Museum,
June 15, 1874.

H A N D - L I S T
OF
SEALS, MORSES, SEA-LIONS,
AND
SEA-BEARS.

Suborder PINNIPEDIA,

Gray, Suppl. Cat. Seals & Whales, p. 1.

The fur of several kinds of Seals changes so much in colour during their life, and presents such different appearances from youth to adult, and even old, age, that it does not afford a reliable character for the distinction of the species. The best external characters are the extent and nakedness of the muzzle, the smoothness or waviness of the whiskers, and the extent of hairiness between the toes ; but the most certain characters of the species are afforded by the skulls and the form of the grinders ; and these characters are more permanent than the external ones. The skull does not alter its shape, except in the development of the scar and ridges for the attachment of the temporal muscle ; and the permanent teeth (which are developed very soon after the birth of the animal) remain of the same form during life.

The milk-teeth of the Seals and Sea-lions &c. are very small, and are shed very early in life, indeed soon after birth, and replaced by the permanent series when the animals are a few weeks old. The permanent teeth, when the crowns are first developed, are more sharply marked than in the adult, for the edges of the lobes or ridges become worn off as the animal increases in age. The teeth become more separated from each other by the development of the jaw-bones : in other respects they retain their characters throughout life.

The position of the teeth with regard to the bones of the skull remains the same during the entire life of the animal ; they retain the same place in the very young and in the adult skull ; and the position of the grinders often affords a good means of dividing the species into genera. For example, Mr. Allen, in his plates of

the northern Sea-bear (*Callorhinus ursinus*), figures the skull and teeth of two adult animals and the skull of one only thirty-five days old—the latter showing the teeth exactly placed as in the figures of the two adult specimens. These skulls also exhibit the varieties that exist in the form of the hinder opening to the nostrils of the same species, the chief difference arising in the more or less imperfect manner in which the hinder margin of the palate is developed.

Family 1. PHOCIDÆ,

Gray, Suppl. Cat. Seals & Whales, p. 1.

Nose simple, not wrinkled nor extended. Grinders: crown compressed, lobed; roots of all, or at least of hinder ones, double.

I. *Nasal bones separate; cutting-teeth erect; claws of hind feet moderate.*
(Northern hemisphere.)

Tribe 1. PHOCINA, *Gray, Suppl. Cat. Seals & Whales, p. 2.*

A. *Cutting-teeth $\frac{5}{4}$; grindersd compressed, crown lobed.*

* *Skull depressed; crown of adult with a linear ridge, diverging into a triangle behind.*

1. CALLOCEPHALUS, *Gray, Cat. Seals & Whales, p. 20; Suppl. p. 2.*

Callocephale, F. Cuvier, Mém. Mus. xi. t. xii. nos. 1-4.

Lower grinders 4-lobed. Palate-opening arched, with a notch in the middle. Crown of the adult skull with an elongate linear ridge between the temporal muscles, suddenly diverging behind. Grinders: upper front roundish, the rest with compressed crowns and with an obscure marginal lobe in front and a rather larger one behind; lower grinders with one marginal tubercle before and two behind the rather larger central one; the second lower grinder placed rather obliquely to the series. The teeth in the very young skull are crowded, the 2nd and 3rd upper and lower grinders being placed obliquely to the line of the jaw, the 3rd and 4th level; but this is not so distinct in the adult skull.

1. CALLOCEPHALUS VITULINUS, *Gray, Cat. Seals & Whales, p. 20.*

Phoque commune, F. Cuvier, Mém. Mus. xi. p. 183, t. xii. no. 1.

Animal, stuffed.

Belfast (*W. Thompson*).

Animal, stuffed.

English coast.

Animal, stuffed, adult.

329 d. Skeleton of ditto, wanting some teeth.

English coast (*Zool. Society*).

Animal, stuffed.

329 *f*. Skeleton of ditto.

Coast of Wales.

Animal just born, stuffed.

1004 *f*. Skull of very young, just born, with bones separate, the milk-canines still existing by the side of the new ones.

Phoca foetida, *Zool. Soc.*

North Sea (*Zool. Soc.*).

329 *a*. Skeleton, young, mounted.

Coast of England (*Mantell*).

329 *e*. Skeleton. Skull nearly full-grown, with central ridge slightly developed.

Phoca annulata, *Warwick*.

Greenland (*Warwick*). 47. 8. 22. 38.

329 *i*. Skeleton.

Europe (*Zool. Society*).

329 *g*. Skeleton. Skull half-grown, with a broad central crown that gradually widens behind.

Europe (*Zool. Society*).

329 *h*. Skeleton of adult. Skull (Pl. I.) solid and depressed, rather broad, $8\frac{1}{2}$ in. long and $5\frac{1}{2}$ in. broad; crown with a narrow ridge between the temporal muscles, which widens before to the middle of the orbit and suddenly diverges behind, leaving a broad triangular area.

Coast of Holland (*Zool. Soc.*). 68. 3. 21. 1.

329 *b*. Skull (fig. 1) half-grown: crown broad, elongate, triangular.

Callocephalus vitulinus, *Gray*, *Cat. Mam. B. M., Seals*, p. 21, f. 7;

Cat. Seals & Whales, p. 21, f. 7.

Greenland (*Möller*). 43. 6. 23. 3.

Fig. 1.



Callocephalus vitulinus.

329 c. Skull, half-grown, with broad, elongate, triangular crown.

Greenland (Möller). 46. 3. 23. 27.

Skull, nearly adult: crown elongate, narrow, triangular; without lower jaw.

Greenland.

2. HALICYON, Gray, *Cat. Seals & Whales*, p. 27; *Suppl.* p. 2.

Crown of adult skull with a linear ridge dividing the temporal muscles. Lower grinders 3-lobed. Palate, hinder opening arched in front. Grinders of upper jaw in a close regular series: the front small, with a rounded crown and one very small lobe on the front and hinder edge and one root, the rest with compressed crowns and two roots; the second placed rather obliquely to the line of the jaw, with a slight collaret on the front angle and two small lobes on the hinder angle; the third, fourth, and fifth placed even with the edge of the jaw, with a very small front and one larger hinder lobe; the fifth tooth the smallest. The lower jaw with the first tooth small, with two very small lobes on the hinder part of the collaret; the second rather oblique; the rest straight, with a distinct well-developed lobe on the front and hinder edge, the hinder lobe being the largest.

1. HALICYON RICHARDSI, Gray, *Cat. Seals & Whales*, p. 30.

Phoca vitulina (part.), Clark, *P. Z. S.* 1873, p. 556.

1431 a. Skeleton, adult. Skull, zygoma imperfect; crown narrow in front, gradually becoming wider behind.

British Columbia, Fraser River. 64. 2. 19. 1.

Presented by Surgeon C. B. Wood.

1431 b. Skull. Front of crown very narrow, becoming triangular behind.

Halicyon Richardii, Gray, *P. Z. S.* 1864, p. 30, figs. 1, 4; *Cat. Seals & Whales*, p. 28, fig. 9.

Vancouver's Island.

Presented by Surgeon C. B. Wood.

1431 c. Skull (Pl. II.), adult. Lower jaw thickened.

Japan, Todonasiri (*A. Adams*). 73. 10.

The three skulls in the British Museum differ among themselves; but all differ from that of *Callocephalus vitulinus*, in which species corresponding individual differences of skull are seen.

The basioccipital bone of 1431 b has a large round hole, which in 1431 a is reduced to a small size, and in 1431 c is entirely obliterated. The three skulls vary in width between the outer sides of the zygomatic arch, 1431 b being 4 inches, 1431 c $5\frac{1}{2}$ inches, and 1431 a 6 inches. They all differ in the opening of the internal nostril, which is rounded in front, that of 1431 b being the widest, that of 1431 a a little narrower, and that of 1431 c narrower still and the front edge more rounded. This may be a sexual character. They all differ from the front edge of the internal nostril of *C. vitulinus* in the front edge being rounded, instead of being angular and notched in the middle.

The grinders of the three skulls of *H. Richardsi* agree in being larger, broader, and with more distinct and longer lobes to the crown than in any of our specimens of *C. vitulinus*.

The lower edge of the lower jaw in 1431*b* and 1431*a* is rather compressed, with a decided prominence under the 3rd and 4th grinders, which is very different from the dilated edge of the lower jaw of *C. vitulinus*; but in the more adult skull of 1431*c*, from Japan, the whole lower jaw is very much thicker and more solid; and though there is a ridge showing where the prominence is in the younger skulls, the internal side of the jaw is somewhat thickened, so that the prominence is not so distinct as in the two other jaws.

Mr. J. W. Clark, who has a skull and skeleton of this Seal from San Francisco (P. Z. S. 1873, p. 556), considers it "the same as *Phoca vitulina*." He appears to have founded this opinion on one of the characters assigned to the species; and not on a comparison of the skulls.

The adult skull is like that of *C. vitulinus*, has the temporal muscles divided by a very narrow ridge, but differs from it in the following particulars:—

In *Halicyon Richardsi* the space between the orbits is broad, with a prominent ridge above, which gradually tapers to a short narrow edge; this ridge in the front part of the brain-case widens and gradually diverges to the sides, leaving a narrow triangular space, which is twice as long as broad at the hinder edge.

In the skull of the adult *Callocephalus vitulinus* the central ridge is linear, gradually widening in front to the hinder part of the septum between the orbits, and behind the middle of the brain-case diverging off into two ridges, leaving a broad triangular space, which is rather shorter than broad, at the hinder edge of the brain-case.

The front margin of the hinder nostrils of the three specimens of *Halicyon* is rounded and entire, and of all the specimens of *Callocephalus* is deeper, with an angular notch in the middle of the front edge.

The lower jaw of *Halicyon Richardsi* is much shorter and more laterally spread out than the lower jaw of *Callocephalus vitulinus* of nearly the same size, and the hinder end of the lower jaw of *Halicyon* is very much longer than that of *Callocephalus vitulinus*.

The skin of *Halicyon Richardsi* is unknown, and has not been compared with that of the Common Seal of Europe; and though the skulls have some similarity, still there may be a great difference in the external appearance of the animals. Many animals with different external appearance have nearly allied skulls, and the converse—that is, with similar external they have different osteological characters.

** Skull elongate; crown of adult flat, broadly triangular from between the orbits.

3. PAGOMYS, Gray, Cat. Seals & Whales, p. 22; Suppl. p. 2.

Crown of the adult skull broad, triangular, narrow between the

orbits, gradually becoming very wide behind. Grinders $\frac{5.5}{5.5}$: upper front one simple, 2nd and 3rd with two small lobes behind the larger one, 4th and 5th with a lobe on each side of the larger one: lower front grinder small, 3-lobed; 2nd and 3rd largest, 4-lobed, one lobe in front and two behind the larger one; 4th and 5th similar to the former, but with the fourth hinder lobe very small, almost rudimentary.

1. *PAGONYX FETIDUS*, Gray, *Cat. Seals & Whales*, p. 23.

Phoca hispida, F. Cuvier, *l. c.* p. 189, t. xii. no. 3 (skull).

Animal, stuffed.

North Sea (*Parzudaki*).

Animal, stuffed.

1004*b*. Skull, broken behind. 50. 2. 12. 9.

North Sea.

Presented by the Lords of the Admiralty.

Animal, stuffed.

1004*a*. Skull, imperfect behind. 50. 2. 12. 10.

North Sea.

Presented by the Lords of the Admiralty.

Animal, young, stuffed.

North Sea.

Animal, stuffed.

North Sea.

1004*c*. Skull, adult, much broken.

North Sea. 52. 3. 11. 4.

1004*c*. Skull (Pl. III.), perfect, nearly adult.

North Sea (*Argent*).

1004*d*. Skull, partly broken, young.

North Sea (*Argent*). 51. 8. 30. 13.

The teeth of *Phoca nummularis* of Japan belong to this genus; but the grinders of the lower jaw are rather shorter and broader and more close together, and the central lobe considerably larger, thicker, and stronger, and all the lobes more acute.

4. *PAGOPHILUS*, Gray, *Cat. Seals & Whales*, p. 25; *Suppl.* p. 2.

Crown of the adult skull flat, narrow in front near the orbits, and gradually becoming very wide behind. Grinders forming a regular series; the upper ones with a compressed crown, having a small lobe on the hinder edge and a very indistinct lobe on the front edge. The lower grinders with a distinct lobe on the front edge and two on the back edge of the central acute lobe, the hinder one being sometimes very small and indistinct.

1. *PAGOPHILUS GRÆNLANDICUS*, Gray, *Cat. Seals & Whales*, p. 25.

Phoca grœnlandica, F. Cuv. *l. c.* t. xii. no. 2; Murie, *P. Z. S.* 1870, p. 604, t. xxxii. (animals from life).

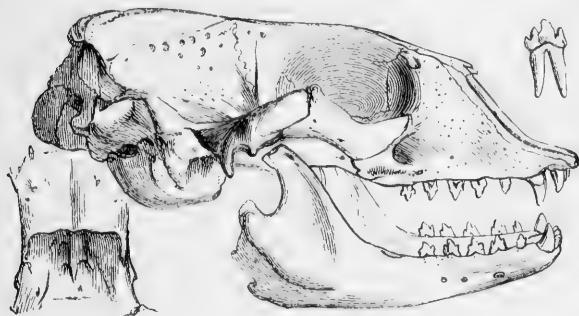
Animal, nearly adult, stuffed. 44. 1. 18. 6.

328 *e.* Skull (fig. 2). 44. 2. 2. 82.

Pagophilus groenlandicus, *Gray, Cat. Mam. B. M., Seals*, p. 25, f. 8;
Cat. Seals & Whales, p. 26, f. 8 (skull).

Greenland.

Fig. 2.



Pagophilus groenlandicus.

Animal, young, stuffed.

North Sea.

Animal, nearly adult, stuffed.

328 *g.* Skull of ditto.

Hudson's Bay.

Presented by G. Barnston, Esq.

Animal, young, stuffed.

Newfoundland.

Presented by the Newfoundland Natural-History Society.

Animal, young, stuffed.

Newfoundland.

Presented by the Newfoundland Natural-History Society.

Skin, male.

North Sea (*Argent*). 52. 1. 16. 2.

Skin.

North Sea (*Brandt*). 44. 3. 14. 4.

Skin of young animal.

1004 *g.* Skull of ditto.

Greenland (*Zool. Soc.*).

328 *f.* Skeleton.

Greenland (*Brandt*).

328 *b.* Skull, nearly adult.

Greenland (*Möller*). 43. 6. 2. 10.

328 *h.* Skull, nearly adult.

Greenland (*Möller*). 43. 6. 28. 5.

328 l. Skull.

Greenland?

328 o. Skull, young.

Greenland (*Rüppell*).

328 i. Skull, nearly adult.

Greenland (*Möller*). 43. 6. 23. 4.

328 a. Skull, nearly adult.

Greenland (*Möller*). 43. 6. 23. 7.

328 k. Skull, smaller, half-grown.

Greenland (*Möller*). 43. 6. 23. 9.

328 j. Skull, young, $5\frac{3}{4}$ inches long. No lower jaw.

Greenland (*Möller*). 43. 10. 7. 9.

328 g. Skull, crown broken. "Two years old."

Hudson's Bay.

Presented by G. Barnston, Esq.

328 c. Skull, nearly adult.

Greenland (*Möller*).

328 d. Skull (Pl. IV.), adult.

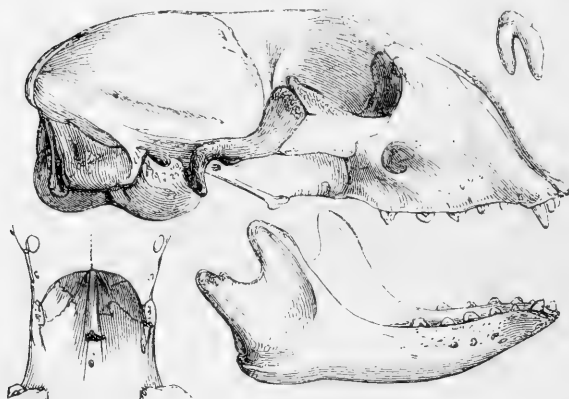
Greenland (*Möller*). 43. 6. 23. 6.

*** Skull ventricose, crown convex. Grinders obscurely lobed, far apart.

5. PHOCA, *Gray, Cat. Seals & Whales*, p. 31; *Suppl.* p. 3.

Grinders far apart; front small, simple, one-rooted, rest two-rooted; 3rd, 4th, and 5th with an obscure lobe on the hinder edge.

Fig. 3.



Phoca barbata.

1. PHOCA BARBATA, *Gray, Suppl. Cat. Seals & Whales*, p. 3; *F. Cuvier, l. c.* p. 189, t. xii. no. 4.

Animal, adult, stuffed.

North Sea (*Warwick*).

Skin.

North Sea.

327 *a*. Skeleton, length 8 feet. Skull (fig. 3). 46. 4. 21. 16.

Phoca barbata, *Gray*, *Cat. Seals & Whales*, p. 31, f. 10; *Cat. Mamm.*

B. M., *Seals*, p. 27, fig. 9 (skull).

North Sea (*Brandt*).

327 *b*. Front of skull and lower jaw.

North Sea.

327 *c*. Skull, adult: palate and front broken. (Pl. V.)

North Sea.

B. Cutting-teeth $\frac{5}{4}$ or $\frac{4}{4}$. *The grinders with a conical crown, with a distinct collar on the inner side, and often a small lobe on the edge. Lower jaw strong.*

6. *HALICHÆRUS*, *Gray*, *Cat. Seals & Whales*, p. 33; *Suppl.* p. 3.

Cutting-teeth $\frac{5}{4}$. *Grinders: upper and lower with a more or less distinct lobe on each edge; the 4th upper grinder with a lobe at the base of its front and hinder edge; the 5th upper grinder with a distinct lobe on the base of its front and hinder edge; the rest of grinders simple.*

1. *HALICHÆRUS GRYPUS*, *Gray*, *Cat. Seals & Whales*, p. 34.

Animal, adult, stuffed.

330 *a*. Skull (fig. 4), broken. 45. 3. 17. 8.

Halichærus grypus, *Gray*, *Cat. S. & W.* p. 33, f. 11; *Cat. Mamm.*

B. M., *Seals*, p. 27, f. 10 (skull).

Northumberland, Fern Island. Presented by J. P. Selby, Esq.

Fig. 4.



Halichærus grypus.

Animal, half-grown, stuffed.

330 *b*. Skull (Pl. VII.), young, bones not knit.

Northumberland, Fern Island. Presented by J. P. Selby, Esq.

Animal, adult, stuffed.

Northumberland, Fern Island.

Mr. Stokes, who has observed these animals at St. David's Head, says the pups are grey, as they grow they become spotted and marbled with darker colour. The adults are blackish brown; the old males become bright bay, like a bay horse.

7. MONACHUS, Gray, *Cat. Mamm. B. M., Seals*, p. 8, f. 1; *Cat. Seals & Whales*, p. 8, f. 1 (bones of feet), *Suppl.* p. 3.

Pélarque, *Frédéric Cuvier, Mém. Mus.* xi. t. xxiii. no. 2 (skull).

Fig. 5.



Monachus albiventer.

Cutting-teeth $\frac{4}{1}$, conical; outer largest, with a distinct collaret on inner side; two middle lower decumbent, the rest perpendicular. Grinders $\frac{5.5}{5.5}$, thick, with a broad conical crown, having a distinct collaret on the inner side and a small lobe at each end, placed in a regular series, the front one of the upper and lower jaw being partly on the inner side of the base of the canines, one-rooted, the rest all two-rooted.

1. *MONACHUS ALBIVENTER*, Gray, *Cat. Seals & Whales*, p. 19, and p. 18, fig. 6 (skull, from Cuvier). (Fig. 5.)

Animal, young, stuffed.

1063 *a*. Skull (Pl. VI.), imperfect.

Heliophoca atlantica, Gray, *Ann. & Mag. N. H.* 1854, xiii. p. 201.

Madeira, Deserta Grande Island.

Presented by R. MacAndrew, Esq.

Animal, adult, stuffed.

1063 *b*. Front of skull with teeth.

Madeira, Deserta Grande Island.

Presented by R. MacAndrew, Esq.

Animal, young, stuffed.

1063 *c*. Skeleton of ditto, mounted. Skull, length $8\frac{1}{2}$ inches (*Phoca leporina*).

Algiers (*Verreaux*).

Animal, stuffed. 63. 4. 1. 1.

1421 *a*. Skeleton of ditto. Skull, length $10\frac{3}{4}$ inches, breadth $7\frac{1}{4}$.

Senegal.

2. *MONACHUS TROPICALIS*, Gray, *Cat. Seals & Whales*, p. 20; *Suppl.* p. 3.

a. Animal, stuffed.

Jamaica.

II. *Nasal bones united together, elongate. Cutting-teeth $\frac{4}{4}$, conical, projecting forwards. Claws of hind feet small.* (Southern hemisphere.)

Tribe 2. *STENORHYNCHINA*, Gray, *Suppl. Cat. Seals & Whales*, p. 3.

* *Skull oblong elongate. Grinders deeply lobed.*

8. *STENORHYNCHUS*, Gray, *Cat. Seals & Whales*, p. 15; *Suppl.* p. 3.

Nasal bones coalesced or partly separated, oblong, four-sided, narrowed, elongate triangular behind. Grinders three-lobed, middle lobe largest.

1. *STENORHYNCHUS LEPTONYX*, Gray, *Suppl. Cat. Seals & Whales*, p. 4.

Animal, adult, stuffed.

325 *a*. Skull (fig. 6) of adult. Nasal bones partly separate. (Pl. VIII.)

43. 1. 8. 4.

Sten. leptonyx, Gray, *Voy. Erebus & Terror*, pl. iii. (animal), pl. iv.;
Cat. Seals & Whales, p. 15, f. 5; *Cat. Mam. B. M.*, *Seals*, p. 12, f. 3
 (skull).

Antarctic seas (*Antarctic Exped.*). Presented by the Admiralty.

Fig. 6.

*Stenorhynchus leptonyx.*

Skin, unstuffed.

325 *b*. Skull, imperfect behind, very large. 43. 4. 16. 1. .

Antarctic seas (*Antarctic Expedition*).

Presented by the Lords of the Admiralty.

Animal, adult, stuffed.

325 *b*. Skull, nose broken: imperfect. 46. 4. 15. 24.

Antarctic seas.

Presented by the Lords of the Admiralty.

325 *c*. Skeleton. 44. 10. 29. 9.

New Zealand, Pt. Nicholson. Presented by Dr. Frederick Knox.

325 *e*. Skull and bones of body.

Antarctic seas.

Presented by the Lords of the Admiralty.

325 *d*. Skull, adult: nearly perfect.

Antarctic seas. 46. 4. 15. 23.

Presented by the Lords of the Admiralty.

325 *f*. Skull, nearly adult: nose much broken.

Antarctic seas? 47. 9. 4. 2.

325 *g*. Skull, nearly adult: nose broken; nasals partly separated from each other in front. 51. 7. 18. 46.

New Zealand. Presented by His Excellency Sir G. Grey, K.C.B.

325 *i*. Skull, adult: nearly perfect.

Lord Howe's Island. Presented by the Lords of the Admiralty.

9. LOBODON, Gray, *Cat. Seals & Whales*, p. 8; *Suppl.* p. 4.

Nasal bones united, triangular; elongate when young, broader when old. Grinders five-lobed, second lobe the largest, the three hinder forming a series.

1. *LOBODON CARCINOPHAGA*, *Gray, Cat. Seals & Whales*, p. 10, fig. 2 (skull).

Phoca carcinophaga, *Voy. Pôle Sud*.

Animal, adult, stuffed.

Antarctic seas. Presented by the Lords of the Admiralty.

Animal, three-parts grown, stuffed. 43. 11. 16. 20.

326 *a*. Skull perfect. 43. 1. 8. 3.

Lobodon carcinophaga, *Gray, Voy. Erebus & Terror*, pl. ii. (skull).

Antarctic seas. Presented by the Lords of the Admiralty.

Skin, adult.

326 *b*. Skull of ditto, adult: nose broken. 43. 11. 16. 8.

Antarctic seas. Presented by the Lords of the Admiralty.

Skin, adult.

Antarctic seas. Presented by the Lords of the Admiralty.

326 *g*. Skeleton.

Antarctic seas. Presented by the Lords of the Admiralty.

326 *c*. Skull (Pl. IX.), adult: perfect.

Antarctic seas. 44. 11. 16. 4.

Presented by the Lords of the Admiralty.

326 *d*. Skull, adult: nose broken.

Antarctic seas. 44. 10. 29. 17.

Presented by Lieut. A. Smith, R.N.

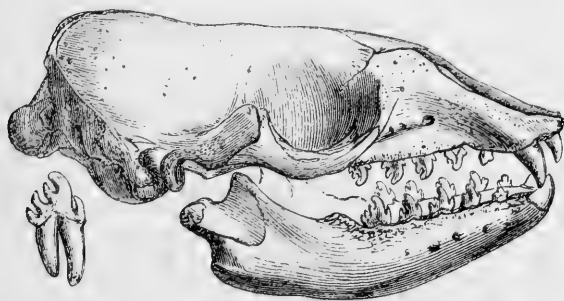
326 *e*. Skull (fig. 7), adult: perfect. 44. 10. 29. 18.

Lobodon carcinophaga, *Gray, Cat. Mamm. B. M., Seals*, p. 9, f. 2;
Cat. Seals & Whales, p. 9, f. 2.

Antarctic seas.

Presented by Lieut. A. Smith, R.N.

Fig. 7.



Lobodon carcinophaga.

326 *f*. Skull, young: perfect.

Antarctic seas. 46. 4. 15. 19.

Presented by the Lords of the Admiralty.

326 *h.* Skull, three-parts grown: perfect.

Antarctic seas. 46. 4. 15. 20.

Presented by the Lords of the Admiralty.

326 *i.* Skull, broken in half, nearly adult.

Antarctic seas. 46. 4. 15.

**** Skull broad, short, depressed. Grinders slightly lobed.**

10. LEPTONYX, *Gray, Cat. Seals & Whales*, p. 11; *Suppl.* p. 4.

Nasal bones united into one, small, oblong triangular, with a subulate elongated projection behind between the maxillary bones.

1. LEPTONYX WEDDELLII, *Gray, Cat. Seals & Whales*, p. 12. (Pl. X.)

Sténorhynque, *F. Cuvier, l. c. t. xiii. no. 1.*

Animal, adult, stuffed.

323 *b.* Skull, wanting back. 44. 3. 21. 1.

Leptonyx Weddellii, *Gray, Mag. N. Hist.* 1836.

East coast of Patagonia; Santa Cruz.

Presented by Capt. Fitzroy, R.N.

Animal, stuffed.

323 *a.* Skull of ditto: nose broken. 44. 4. 6. 1.

L. Weddellii, *Gray, Mag. N. Hist.* 1836.

East coast of Patagonia; Santa Cruz.

Presented by Capt. Fitzroy, R.N.

Animal, stuffed, small.

L. Weddellii, *Gray, Voy. Erebus & Terror*, pl. v.

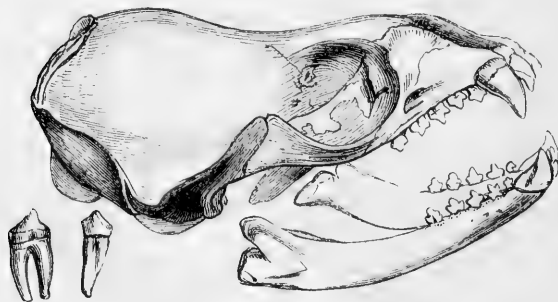
323 *c.* Skull of ditto (fig. 8).

L. Weddellii, *Gray, Voy. Erebus & Terror*, pl. vi.; *Cat. Seals & Whales*, p. 11, f. 3; *Cat. Mamm. B. M.*, *Seals*, p. 15, f. 4.

Antarctic seas (*Antarctic Expedition*).

Presented by the Lords of the Admiralty.

Fig. 8.



Leptonyx Weddellii.

323 *d.* Skull, nearly perfect: $10\frac{1}{2}$ inches long.

Antarctic seas (*Antarctic Expedition*). 46. 4. 25.

Presented by the Lords of the Admiralty.

11. OMMATOPHOCA, *Gray, Cat. Seals & Whales*, p. 13; *Suppl.* p. 4.

Nasal bones united, very long, narrow, attenuated behind.

1. OMMATOPHOCA ROSSII, *Gray, Cat. Seals & Whales*, p. 14.

Animal, stuffed.

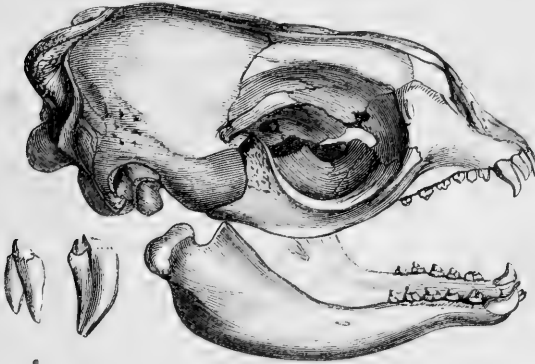
324 *a.* Skeleton. Skull broken (fig. 9). (Pl. XI.) 43. 11. 25. 4.

Ommatophoca Rossii, *Gray, Voy. Ereb. & Terr.* pl. vii. (animal),
pl. viii. figs. 1, 2, 4 (skull); *Cat. Mamm. B. M., Seals*, p. 19, f. 6;
Cat. Seals & Whales, p. 13, f. 4 (skull).

Antarctic seas.

Presented by the Lords of the Admiralty.

Fig. 9.



Ommatophoca Rossii.

324 *c.* Skeleton and skull.

Antarctic seas.

324 *b.* Skull, nearly complete. 43. 11. 16. 1.

Ommatophoca Rossii, *Gray, Voy. Ereb. & Terr.* pl. viii. figs. 3, 5.

Antarctic seas.

Presented by the Lords of the Admiralty.

III. *Nose transversely wrinkled; male with a dilatile appendage. Skull: nose-hole large; cutting-teeth $\frac{4}{2}$, conical; grinders $\frac{4}{4}$ or $\frac{5}{5}$, crown roundish, with swollen roots and small simply plated crowns with a central ridge. Sea-elephants.*

The skulls of the young and old specimens are very much alike; the noses of the males are broadly dilated, of females narrower.

Tribe 3. CYSTOPHORINA, *Gray, Suppl. Cat. S. & W.* p. 4.

12. MORUNGA, *Gray, Cat. Seals & Whales*, p. 38; *Suppl.* p. 4.

1. MORUNGA ELEPHANTINA, *Gray, Suppl. Cat. Seals & Whales*, p. 4.

Macrorhin, *F. Cuv. l. c.* p. 200, t. xiv. no. 1 (skull, adult).

Le Phoque de Patagonie, *F. Cuv. l. c.* t. xiv. no. 2 (skull, juv.).

Animal, adult, stuffed. 43. 11. 16. 24.

Morunga elephantina, *Gray, Voy. Ereb. & Terr.* pl. ix. (animal), pl. x.

Antarctic seas.

334 *b.* Skeleton. Skull perfect, length 15 in., width $8\frac{3}{4}$ (fig. 10).
43. 11. 16. 5.

Morunga elephantina, *Cat. Mamm. B. M., Seals*, p. 33, f. 12; *Cat. Seals & Whales*, p. 38, f. 13 (skull).

Antarctic seas.

Fig. 10.



Morunga elephantina.

Animal, stuffed.

Antarctic seas.

Presented by the Lords of the Admiralty.

Animal, stuffed.

Antarctic seas.

Presented by the Lords of the Admiralty.

Skin of young male.

Antarctic seas.

334 *d.* Skeleton. Skull perfect?

Cape of Good Hope (*Bartlett*).

Skin.

334 *e.* Skull.

South Seas.

334 *c.* Skeleton and skull ($8\frac{1}{2}$ in. long and $6\frac{1}{4}$ in. wide) of a young female (Pl. XII.).

Antarctic seas. 46. 4. 15. 21.

Presented by the Lords of the Admiralty.

334 a. Skull of young.

Antarctic seas.

13. CYSTOPHORA, *Gray, Cat. Seals & Whales*, p. 40; *Suppl.* p. 5.

1. CYSTOPHORA CRISTATA, *Gray, Cat. Seals & Whales*, p. 41.

Stemmatope, *F. Cuvier, l. c.* p. 196, t. xiii. no. 3.

Animal, adult male, stuffed. 44. 1. 18. 7.

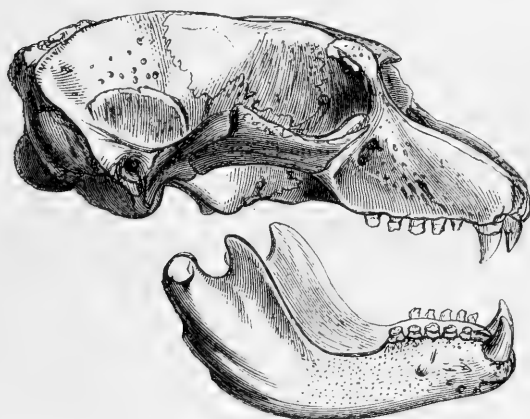
332 b. Skull (fig. 11): length $10\frac{1}{2}$ in., breadth $8\frac{1}{4}$. 44. 2. 2. 81.

Cystophora cristata, *Gray, P. Z. S.* 1849, p. 92 (skull no. 1); *Cat.*

Mamm. B.M., *Seals*, p. 36, f. 13; *Cat. Seals & Whales*, p. 41, f. 14.

Greenland.

Fig. 11.



Cystophora cristata.

Animal, adult male, stuffed. 43. 9. 27. 3.

332 c. Skull, partly broken. 43. 10. 7. 7.

Cystophora cristata, *Gray, P. Z. S.* 1849, p. 92 (skull no. 3).

Greenland.

Animal, adult female, stuffed.

Greenland.

Animal, half-grown, stuffed.

Greenland.

Skin, young.

Greenland.

Presented by G. Barnston, Esq.

Animal, young, stuffed.

Greenland.

332 i. Skeleton of young: skull $6\frac{3}{4}$ in. long, 5 in. wide.

Greenland (*Zool. Soc.*). 70. 6. 22. 10.

- 332 *a.* Skull, adult female. Nose narrow. 44. 6. 23. 1.
Cystophora cristata, Gray, *P. Z. S.* 1849, p. 92. no. 2.
 Greenland.
- 332 *d.* Skull, without lower jaw, nearly adult.
C. cristata, Gray, *l. c.* p. 92. no. 5.
 Greenland.
- 332 *e.* Skull, half-grown female. Nose narrow. 43. 6. 23. 2.
C. cristata, Gray, *l. c.* p. 92. no. 6.
 Greenland.
- 332 *f.* Skull, very young (Pl. XIII.). 43. 10. 7. 8.
C. cristata, Gray, *l. c.* p. 92. no. 7.
 Greenland.
- 332 *g.* Skull, nearly adult female. Nose narrow.
 Greenland.
- 332 *h.* Skull, nearly adult: imperfect. 46. 3. 19. 3.
C. cristata, Gray, *l. c.* p. 92. no. 4.
 Greenland.
- 332 *h.* Skull, aged. Lost some teeth.
 Norway (*Günther*).
2. CYSTOPHORA ANTILLARUM, Gray, *Cat. Seals & Whales*, p. 43.
 Animal, stuffed, young male?
- 1005 *a.* Skull, young, broken. Muzzle rather dilated. 48. 7. 12. 14.
Cystophora antillarum, Gray, *P. Z. S.* 1849, p. 93.
 West Indies, Jamaica.
 This skull is exceedingly like that of the young *C. cristata*.

Family 2. TRICHECHIDÆ,

Gray, *Suppl. Cat. Seals & Whales*, p. 5.

1. TRICHECHUS, Gray, *Cat. Seals & Whales*, p. 35; *Suppl.* p. 6.
1. TRICHECHUS ROSMARTUS, Gray, *Cat. Seals & Whales*, p. 36.
 Animal, adult, stuffed.
 Arctic Sea.
- Animal, young, stuffed.
 Arctic Sea.
- Animal, young, stuffed.
 Arctic Sea.
- Fœtus, in spirits.
 North Pacific.
- 331 *h.* Skeleton.
 Arctic Ocean.

331 a. Skull, adult (fig. 12).

Trichechus rosmarus, Gray, *Cat. Mamm. B. M.*, *Seals*, p. 31, f. 11 ;
Cat. Seals & Whales, p. 35, f. 12.

Arctic Ocean.

Fig. 12.

*Trichechus rosmarus*.

331 b. Skull, adult.

Arctic Ocean.

Presented by General Hardwicke.

331 c. Skull of young.

Arctic Ocean.

331 i. Front of young skull, covered with skin.

Arctic Ocean.

Presented by the Linnean Society.

331 j. Skull.

Arctic Ocean.

331 k. Skull, without lower jaw.

Arctic Ocean (*Lidth de Jeude*).

331 e, f, g. Three tusks.

N.W. coast of America.

Presented by Capt. Kellett, R.N.

331 d. Tooth, longitudinally divided.

Arctic Ocean.

Presented by Dr. J. E. Gray, F.R.S.

Family 3. OTARIADÆ,

Gray, *Suppl. Cat. Seals & Whales*, p. 6.

It is curious, after Steller's and Forster's description of the Sea-bear, that they should be regarded as Seals. It is evident that

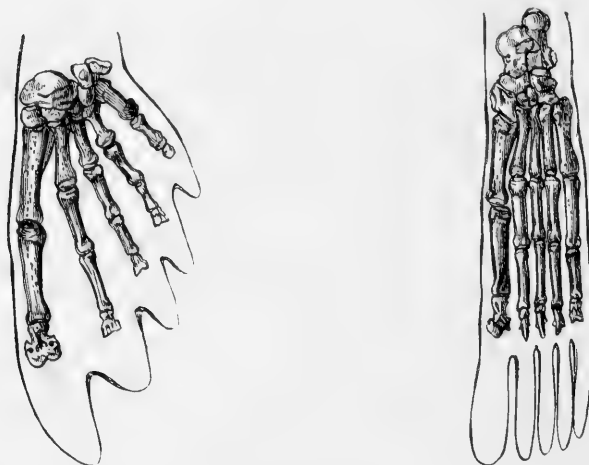
Fischer observed their un-Seal-like characters when he inquired if they should not be arranged with *Enhydris*; yet Quoy and Gaimard figure the two species of this genus which they observed with elongate bodies and in the attitude of the common Seals (*Phocidæ*); and Gould did the same with the Australian species (I believe he had never seen the species alive).

- I. *Skull with the palate elongate, produced behind. The opening of the internal nostrils in a line just before the condyles.* Grinders $\frac{6.6}{5.5}$. Sea-lions.

Tribe 1. OTARIINA, Gray, *Suppl. Cat. Seals & Whales*, p. 12.

1. OTARIA, Gray, *Cat. Seals & Whales*, p. 57; *Suppl.* p. 12.

Fig. 13.



Feet of Sea-lion.

The brain-cavity is large and oblong in the skulls of the younger animals, and nearly as long as the face and palate; but these parts enlarge as the animal reaches the adult age, and when quite adult the length from the back edge of the condyle is only half, or nearly half, of the length of the palate. They are figured as *Otaria leonina*, F. Cuvier, *Mém. Mus.* xi. t. xv. no. 2; *Otaria jubata*, Blainv. *Ostéogr.* t. iii. & vi.; *Otaria Godeffroyi*, Peters, *Monatsb.* 1866, p. 267, t. i.

- * *The head broad, short. The lower jaw broad behind, bowed on the sides, rounded in front. The lower edge from the angle to the gonyx as long as the jaws are wide at the angle. Lower margin expanded in the adult.*

1. OTARIA JUBATA, Gray, *Suppl. Cat. Seals & Whales*, p. 13.

Otaria leonina, Gray, *Cat. Seals & Whales*, p. 59.

The scar of the temporal muscle at the back of the lower jaw is broad and rounded in front.

Animal, stuffed.

Falkland Islands.

Animal, young male, stuffed.

Otaria Hookeri, *Sclater, P. Z. S.* 1866, p. 80, fig.

Rio de la Plata (*Leconte; Zool. Soc.*).

Animal, stuffed, adult.

335 a. Front of lower jaw of ditto.

N.W. coast of America.

Presented by Capt. Fitzroy.

335 d. Skull, with lower jaw, of an old male; length $14\frac{1}{2}$ inches, breadth $9\frac{1}{4}$ inches; wanting many teeth. Nose very dilated in front, palate very much contracted behind. Prominence on each side of head.

South America.

The skulls with the lateral tubercles are like the one figured by Cuvier from the cabinet of M. Faujas (*Oss. Foss. v. p. 222, t. xviii. fig. 4*). Dr. Peters refers this to *Otaria leonina*.

335 o. Skull, length 14 inches, breadth $9\frac{1}{2}$ inches, without teeth.

Very like 335 d. Sixth grinder far back, separated from the fifth by a space. With only left side of lower jaw.

Falkland Islands (*Leconte*).

335 l. Skull, with lower jaw; length $14\frac{1}{2}$ inches, breadth $9\frac{7}{8}$; wanting a few teeth. Very like 335 d and 335 o, with only rudimentary prominences. The sixth upper grinder partly behind the back edge of the front of the zygomatic arch.

Falkland Islands (*Abbott*).

335 n. Skull, without lower jaw; length 14 inches, breadth $8\frac{5}{8}$ inches; with only one large canine tooth; the sixth grinder with the back edge on a level with the back edge of the front of the zygomatic arch.

This has the same dentition as *Phoca jubata* (Loup marin), Blainv. *Ostéogr. pls. iii. & vi.*; *Otaria Godeffroyi*, Peters, *Monatsb.* 1866, p. 267, pl. 1. Dr. Peters refers this latter figure to *Otaria jubata*.

335 p. Skull, without teeth; length $14\frac{1}{4}$ inches, breadth 9 inches.

The palate not so much contracted; the sixth upper tooth separated from the fifth, and partly behind the back edge of the front of the zygoma; side of head with tubercles. Only one side of lower jaw.

Southern Peru, Lomas. 69. 8. 10. 1.

Presented by J. M. Dow, Esq.

335 c. Skull, with lower jaw; teeth perfect. Length 14 in., breadth 9 inches. Palate very deep, slightly contracted behind, with the processes erect; sides of head with a small tubercle. (Pl. XIV.)

South America (*Argent*). 51. 5. 5. 1.

There are two young skulls in the British Museum with the bones

very light, thin, and still separate, especially those of the under part of the brain-case. They both want a great part of their cutting-teeth and grinders, but the alveolæ left by them show that the permanent set were well developed; the canine teeth are being developed. The lower jaws are wanting in both, so that we cannot tell to which species they belong. The front of the palate is contracted. Their size, which is as large as that of the older skulls in the Museum, makes it probable that they are the young of the large common *O. jubata*; but they are both rather narrow, and one comes from the Falkland Islands and the other from Coquimbo, so that they are found in the seas of both sides of South America.

335 *m.* Skull, without lower jaw, $8\frac{3}{4}$ inches long and $4\frac{3}{8}$ inches wide. Grinders, which are all absent, are crowded, forming a very irregular line, very unlike the series of grinders in the smaller skulls. This may be a young male of *O. minor*, on account of its narrow shape.

Otaria jubata, Gray, *Zool. Erebus & Terror*, t. xvii. figs. 1, 2.

Chili, Coquimbo. 47. 4. 20. 13.

Presented by the Haslar Hospital.

335 *h.* Skull, without lower jaw, $7\frac{1}{2}$ inches long and $4\frac{1}{8}$ inches in width, probably of a female. The upper canines are but partly exposed, and are not so large as the outer canines or the front grinders. About 11 months old.

Falkland Islands, North Point (*Leconte*). 69. 2. 24. 4.

There is a third skull of a very young animal of a smaller size in the Museum. It has the short wide lower jaw with a rounded front of *O. jubata*, but is of such a small size that it indicates a variety of that species.

335 *g.* Skeleton of a very young animal, taken from Guano. The skull is $6\frac{5}{8}$ inches long and $3\frac{7}{8}$ inches broad, has the bones not knit, and is in the act of changing its teeth, the canines of the milk-set being retained. The grinders are large, the upper series occupies $1\frac{5}{8}$ inch in length, and the lobes of the teeth are well marked. The lower jaw broadly diverges, and the chin is large, broad, and rounded.

Peru, Guinesse Island. 70. 1. 19. 1. Presented by H. Lloyd, Esq.

There is a series of skulls in the Museum which agree with *Otaria jubata* in the form of the lower jaw, it being broad and rounded in front, with a short lower margin, and broadly separated at the condyles, the middle of the branches of the lower jaw being rather bowed out. They evidently belong to both sexes. The skulls are rather solid and the bones well united together; but they have not got the occipital ridges of adult skulls, as their canines are generally developing. They are probably skulls of the growing animal of this species. They vary in their breadth compared with their length, some being narrower.

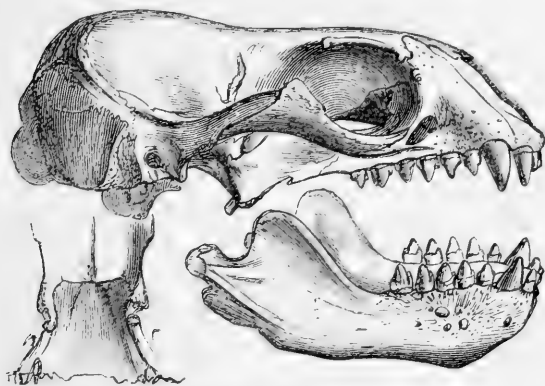
335 *b.* Skull of male, 10 inches long, $5\frac{1}{2}$ wide at the condyles. The bones well knit. The permanent cutting-teeth and grinders

well developed. Six grinders well behind, and the fifth partly behind, the front edge of the zygomatic arch. The large upper and lower canines are being cut. The front of the lower jaw broad, rounded. (Fig. 14.)

Otaria leonina, Gray, *Cat. Seals*, 1850, p. 46, fig. 16; *Cat. Seals & Whales*, 1866, p. 58, fig. 18.

Peru (*Bridges*). 47. 4. 20. 13.

Fig. 14.



Otaria jubata.

335 *g*. Face and lower jaw of the skull of a male, very similar in size and character to the preceding.

Chili (*Brandt*).

335 *k*. Skull, probably of a male; $8\frac{3}{4}$ inches long, $4\frac{3}{4}$ inches wide.

Very like the two preceding in both jaws, but the skull is narrower, and the front of the lower jaw not quite so ventricose.

Falkland Islands? 50. 6. 17. 9.

335 *f*. Skull, probably of a female, from the small size of the lower canines, with the bones equally well knit. $8\frac{5}{8}$ inches long, $4\frac{5}{8}$ inches wide. Front of the lower jaw not quite so convex.

Hab. Unknown (*Zool. Soc. Mus.*).

335 *r*. Skull, the bones equally well knit, 8 inches long, evidently of a female, the teeth being well developed. The canines in both jaws small. Line of grinders 2 inches. Front of lower jaw only slightly convex. (Pl. XV.)

West coast of Patagonia (*Whitely*). 74. 3.

All these skulls, of which the habitat is certainly known, come from the west coast of America. The compression of the front of the lower jaw and its small size, especially of the one from Patagonia, shows an affinity to *Otaria ulloæ*; but it has the short wide curved lower jaw of *Otaria jubata*, and may be a species of which the adult is not known.

The lower jaw is short and strong, the lower margin, from the suture to the angle of the gonyx, is about as long as the extent to which the jaws are separated from one another at the angle; the outline of the space between the lower margins is half-oblong—that is to say, the front is rounded and the sides rather bowed out. The front end of the lower jaw of the young and of some of the old specimens is swollen, thick, and broad, evidently to afford room for the development of the lower canines, and are doubtless the jaws of the males, which have very large canine teeth. The lower edge of the lower jaw of the large old skulls much bent out and expanded, giving them quite a different appearance from that of the skulls of the younger Sea-lions.

The front part of the lower jaw of two skulls of evidently young specimens, which, from the small size of their canines, are doubtless those of young females, is much less developed, with flattened sides. They have the same short jaws and same form of the opening between the lower edge as the males.

The width of the four middle cutting-teeth of the upper jaw in the skull of the young Sea-lion is about $\frac{3}{4}$ inch, and they occupy the same width in most adult skulls.

The outer cutting-teeth on each side seem to enlarge during life, and with the sex probably of the animal. In a skull 8 inches long the canines are $1\frac{1}{8}$ inch apart, measured from the outside, whereas in an adult male skull 14 inches long they are $2\frac{1}{2}$ or $2\frac{5}{8}$ inches apart. The canine teeth keep continually growing. Thus, in a young male rather more than $8\frac{1}{2}$ inches long they are $1\frac{3}{4}$ inch apart, whereas in an adult male 14 inches long they are nearly 5 inches apart.

The skulls of the younger animals have the grinders in the normal position with relation to the front part of the zygomatic arch—that is to say, the fifth is partly and the sixth entirely behind the hinder edge of the front of the zygomatic arch; but this part of the arch expands in the very old skulls, especially of males, so that the sixth upper grinder appears to alter its place, and be partially or completely before the hinder edge of this part. Sometimes this tooth, on the two sides of the jaw, differs in this respect, one being partially and the other entirely before the hinder edge of the front of the zygomatic arch.

This animal is the "Sea-lion" of Cook and Forster, Byron, and other voyages in the South Seas. It is the "Lion marin" of Buffon and Cuvier, the *Otaria molossina* of Lesson's 'Voyage of the Coquille,' t. iii.; the *Otaria hookeri* of Murie, P. Z. S. 1867, p. 243; the Sea-bear of the 'Illustrated London News.'

The skull of Byron's specimen is in the Museum of the Royal College of Surgeons, and the skull of *Otaria molossina* of Lesson is in the Museum of Paris.

The skull is figured in Cuvier, Oss. Foss. v. p. 222, t. xviii. fig. 4, as *Lion marin*; in Blainville's 'Ostéographie,' t. vi. and t. ix., as *P. leonina*; in Frédéric Cuvier, Mém. Mus. xi. p. 208, t. xv. fig. 2, as the type of his genus "*Platyrrhynque*;" and the young skull is figured

in the Cat. Seals in the British Museum, 1850, fig. 16, as *Otaria leonina*.

The names of *Phoca jubata*, Schreber, *P. scout*, Boddaert, *P. Ansoni* and *P. Byronii*, Blainville, and *P. molossina*, Lesson, *Otaria Pernettyi* and *O. Forsteri*, Lesson, *O. chilensis* and *O. platyrhynchus*, Müller, *O. Guerinii*, Quoy, and *O. Byronia*, Peters, have been given to various specimens of this species.

** *The head elongate; the lower jaw elongate, sides flat, compressed in front. The lower edge, from the angle to the gonyx, longer than the jaws are wide at the angle. The scar of the temporal muscle on the lower jaw is elongate and narrow in front.*

2. OTARIA MINOR, Gray, *Ann. & Mag. Nat. Hist.* 1874, xiii. p. 326. (Smaller Sea-lion.)

The palate very deep and wide, broad in front, contracted behind, with the lateral processes rather contracted.

335 i. Skull, $11\frac{1}{2}$ inches long and $6\frac{1}{2}$ wide at condyles, of male adult. The sixth upper grinder behind the hinder edge of the front of the zygomatic arch; the lower jaw $8\frac{1}{2}$ inches long, wide and strong, contracted on the sides in front. (Pl. XVI.)

Hab. Unknown (*E. Cross*). 52. 1. 5. 30.

335 e. Skull, 12 inches long and $6\frac{3}{4}$ wide, wanting maxillary bones, and having only the canine teeth. Palate deep, slightly contracted behind; lobes erect. Sixth upper grinder separated from the fifth by a space just before the back edge of the front of the zygomatic arch. Lower jaw compressed in front.

South America (*Zool. Soc.*).

These may be the same as *Otaria Godeffroyi*, Peters, described and figured from a specimen in the Museum at Hamburg, which is about the same size; but the lower jaw in the figure is not of the same shape as the lower jaw of the skull in the Museum. It and the scar of the masseter muscle are broad and rounded at the end, as in the jaws of the common Sea-lion (*Otaria jubata*). I am inclined to think that the Hamburg skull belongs to a small species allied to, or is a small variety of, the common Sea-lion (*Otaria jubata*).

3. OTARIA ULLOÆ. (The Pigmy Sea-lion.)

Otaria pygmæa, Gray, *Ann. & Mag. Nat. Hist.* 1874, xiii. p. 326.

Otaria ulloæ, *Tschudi, Fauna Peruana*, p. 136, t. vi. (animal); *Peters, Monatsb.* 1866, p. 667, t. (skull).

Otaria (*Phocarcos*) *ulloæ*, *Peters, Monatsb.* 1866, p. 270.

335 j. Skull of an adult (female?), $9\frac{1}{4}$ inches long and $5\frac{1}{4}$ broad at the condyles. The palate is very narrow, deep, scarcely wider behind. The sixth upper grinder is behind the hinder edge of the front of the zygomatic arch. The lower jaw is compara-

tively slender, $6\frac{1}{2}$ inches long, compressed and flat in front. (Pl. XVII.)

Otaria pygmæa, Gray, *Ann. & Mag. Nat. Hist.* 1874, xiii. p. 326.

Hab. Unknown. The specimen (58. 5. 4. 17) was received from the Zoological Society in 1858.

This skull is partly broken behind, and wants all the grinders and the greater part of the cutting-teeth. The canines are comparatively small, which makes me think that it belongs to a female; indeed I might regard it as the female belonging to the same species as the skull before described but for the peculiar form and narrowness of the palate. The palates of the two sexes of the common Sea-lion are of the same form, but they become deep with age and those of the males more contracted behind; so that they give no authority for believing that the palates of the two sexes of an allied species are so different.

This species appears to have been first described by Tschudi, and figured in his 'Fauna Peruana;' and Dr. Peters, from Tschudi's description of the skull, refers it to the subgenus *Phocarcetos*, but afterwards he received, described, and figured the skull of one of the original specimens, and found it to be a species of his subgenus *Otaria*. He describes the skull as rather more than 9 inches long. His figure agrees very well with the Museum specimens; but he does not take any notice of the form of the lower jaw being different from that of *Otaria jubata* (Monatsb. 1866, p. 667).

Dr. James M'Bain, in the Journ. Anat. Phys. vol. iii. p. 109, describes a skull from the Chincha Islands, which he thinks may be the same as *Otaria ulloæ*, but has some points of difference, and proposes to call it *O. Graii*. On Dr. Peters's plate of *O. ulloæ* I had marked, "It is exactly like Dr. Turner's specimen from Mr. M'Bain."

II. *Skull with the palate short, the opening of the inner nostrils some distance in front of the line between the condyles.*

Judging by the very few specimens of the skulls of the very young Sea-bears in the British Museum, and by the figures of the skulls of the young that have been published, they offer two variations in respect of the shape of the internal nostrils:—

In one case the opening of the internal nostril at the end of the palate of the young, as in the adult animal, is short, broad, truncated in front, with sometimes a central notch; and the edge of the internal nostril, in the very young animals, as in *Otaria*, is near to the line between the condyles, but not so near as in that genus; and as the animal grows, and the bones of the face lengthen, the opening of the internal nostrils extends further forward, and becomes gradually oblong, narrower, and arched in front, as in *Gypsophoca tropicalis*.

In the second case the hinder opening of the nostril of the very young skull in *Callorhinus*, as figured by Mr. Allen, in *Eumetopias Stelleri*, as shown by the specimens in the Museum, and (judging by the half-grown specimens) in *Arctocephalus antarcticus* and *Zalo-*

phus Gilliespii is elongate, coming far forward, and acute in front, and becomes shorter, narrower, and rounded in front in the full-grown animals.

It is to be observed that the two forms of the opening to the palate have been observed in the two species of the genus *Euotaria*.

All these variations have been considered characteristic of species when only one skull has been examined; but the accession of a larger series of skulls shows how these parts vary during growth, and the necessity of examining a series of specimens of each species.

Several genera of Sea-bears, as *Gypsophoca*, *Arctophoca* (if not the same as the former), and *Eumetopias*, have the upper hinder grinder directed backwards, especially at the tip.

A. The grinders $\frac{6 \cdot 6}{5 \cdot 5}$; the fifth and sixth upper quite behind the back edge of the front of the zygomatic arch.

Tribe 2. GYPSOPHOCINA.

2. GYPSOPHOCA, Gray, P. Z. S. 1872, p. 659.

Arctocephalus, *** *Gypsophoca*, Gray, *Suppl. Cat. Seals & Whales*, p. 24.

Skull broad behind, at the part behind the ear-hole; the palate narrow, concave; the internal nostrils rounded in front, and diverging on the sides behind. Grinders $\frac{6 \cdot 6}{5 \cdot 5}$; the two hinder upper with two roots, quite behind the hinder edge of the zygomatic arch; the fifth lower fitting between the fourth and fifth upper grinders; the crown of the grinders triangular, elongate, recurved; the upper with a slight denticle in front of the base, the two hinder smooth; the lower ones with a very slight notch on each side.

This genus probably has a large geographical distribution.

This genus differs from *Arctocephalus* in the position of the upper grinders, the narrowness of the palate, &c.

The small skull figured as *Otaria Stelleri* in the 'Fauna Japonica,' t. xxii. figs. 5 & 6, is more probably a species of the genus *Gypsophoca* than of the genus *Euotaria* to which I formerly referred it.

Dr. Hector, in the Transactions of the New-Zealand Institute, iv. p. 12, fig. 2, figures a skull under the name of *Arctocephalus cinereus* (young), from Auckland Island, which is evidently a *Gypsophoca*; but the skull figured by Dr. Hector wants the last pair of grinders in the upper jaw, but the cavities for the reception of their roots are well marked. This skull is certainly not a young *Phocarcos*, as Mr. Clark appears to think, P. Z. S. 1873, p. 759.

Dr. Peters, in the 'Monatsbericht,' 1866, p. 276, t. 2, describes and figures a skull from Juan Fernandez, on the west coast of America, which he received from Dr. Philippi, and founded on it his genus *Arctophoca*, calling it *A. Philippii*.

This skull of *A. Philippii*, from the large size and peculiar form of the brain-cavity, and the peculiarities of its underside (especially its large foramen), agrees with the skull of *Gypsophoca tropicalis*, from North Australia, in the British Museum; but it is described and

figured as only having five grinders on each side of the upper jaw, and Dr. Peters founds his characters on this peculiarity. I believe that the skull will be found to have lost the small upper hinder grinders, for which there is space at the hinder end of the alveolar edge. The skull has the fifth grinder behind the back edge of the front part of the zygomatic arch. The only Seals that I know that have the teeth in this position have six grinders in the upper jaw; and they, like this genus, all have triangular-shaped grinders and abundant under-fur.

Dr. Peters in his second paper on Eared Seals, 'Monatsbericht,' 1866, p. 671, enlarges his subgenus *Arctophoca*, and also refers to it *Otaria falklandica* of Shaw and Burmeister, which he says is my *Otaria nigrescens*, from the unpublished figure of the skull of it which I gave him, and which is a species of my genus *Euotaria*, which has only the sixth upper tooth behind the front of the zygomatic arch.

Dr. Philippi sent a description and figure of a skull that he had received from the island of Masafuera, on the west coast of South America, which is published by Dr. Peters in the 'Monatsbericht' for 1871, p. 588, t. 1, 2, and which he calls *Arctophoca argentata*. This skull wants the hinder part of the brain-case, has six grinders in its upper jaw, and is in every respect very like the skull of *Gypsophoca tropicalis* from North Australia and the *Arctophoca Philippii* from Juan Fernandez. It chiefly differs from the figure of the latter skull, as Dr. Philippi shows in his plate, in the hinder portion of it being narrower, and the condyles much shorter or rather narrower.

These three skulls have nearly the same teeth, and appear to me to belong to one group; but whether they are three distinct species (two from the west coast of South America and one from North Australia) I will not attempt to determine, as I have only seen the skins and skull of the one from the latter region; but they are all Fur-Seals, and may be distinct.

The figures of the skulls of *Otaria Philippii* and of *Otaria argentata* have the front edge of the hinder aperture of the nostrils with a triangular slit in the middle; the young skull of *Gypsophoca tropicalis* has it truncated and entire; but this part, as I have already observed, is liable to be imperfect in this respect in many species. (Gray, P. Z. S. 1872, p. 659.)

1. *GYPHSOPHOCÆ TROPICALIS*, Gray, P. Z. S. 1872, p. 659, figs. 5 & 6 (skull).

Arctocephalus nigrescens, *b & c*, Gerrard, *Cat. Bones B.M.* p. 147.

Arctocephalus cinereus, Gray, *Cat. Seals & Whales*, p. 56; *Ann. & Mag. Nat. Hist.* 1866, xviii. p. 236 (not synonyma).

Arctocephalus cinereus (young), Clark, P. Z. S. 1873, p. 759.

Black, grey beneath; under-fur abundant, reddish brown.

Hab. North coast of Australia (*Mr. John Macgillivray*).

Animal, with skull, stuffed.

North Australia (*Macgillivray*).

1484 a. Skull of young. (Pl. XVIII.)

Gypsophoca tropicalis, Gray, P. Z. S. 1872, p. 660, figs. 5, 6.

North Australia (*Macgillivray*). 53. 10. 22. 3.

Presented by the Admiralty.

Skull broad behind, tapering in front; front part one third longer from the condyle than from the condyle to the occiput. Palate narrow; 5th and 6th upper hinder grinders quite behind the hinder edge of the zygomatic arch. Under-fur abundant.

Animal, stuffed.

1484 b. The lower jaw and front of upper jaw, young.

North Australia (*Macgillivray*). Presented by the Admiralty.

B. The grinders $\frac{6.6}{5.5}$; the sixth upper behind the front edge of the zygomatic arch; the fifth is even with it, but this tooth is sometimes rudimentary and falls out early in life, leaving a space between the fourth and sixth teeth.

Tribe 3. ARCTOCEPHALINA.

Arctocephalina and *Callorhinina*, Gray, *Suppl. Cat. Seals & Whales*, pp. 14, 15.

In the very young *Eumetopias* there is a hole for the rudimentary fifth tooth on one side. In the adult skull there is a space between the fourth and sixth teeth. In the young skull of *Phocarcos elongatus* from Japan this tooth is perfectly developed; but it is absent on both sides in the adult, leaving a vacant space.

* Head elongate; face produced.

3. PHOCARCTOS, Gray, *Suppl. Cat. Seals & Whales*, p. 15.

Skull elongate, front part much longer than twice the length of the hinder part of the skull to the condyle. Palate very deep, much wider in the middle. Under-fur sparse.

Grinders: 5th and 6th hinder upper quite behind the hinder edge of the zygomatic arch.

1. PHOCARCTOS HOOKERI, Gray, *Suppl. Cat. Seals & Whales*, p. 15.

Arctocephalus Hookeri, Gray, *Cat. Seals & Whales*, p. 53, p. 44.

f. 15; *Cat. Mam. B. M.*, *Seals*, p. 31, f. 14 (bones of feet).

Otaria Hookeri, Clark, P. Z. S. 1873, p. 754, fig. (skull, adult male)

Arctocephalus falklandicus, Burmeister, *Ann. & Mag. Nat. Hist.* 1866, xviii. t. 9. figs. 1-4 (skull).

Otaria jubata, Allen.

Animal, stuffed, adult female.

Arctocephalus Hookeri, Gray, *Voy. Erebus & Terror*, pl. xiv.

336 c. Skull of above, broken.

Antarctic seas (from the *Antarctic Expedition*).

Presented by the Admiralty.

Animal, stuffed, adult female.

336 *d.* Skull of the above, broken.

Antarctic seas (*from the Antarctic Expedition*).

Presented by the Lords of the Admiralty.

Stuffed specimen, adult male. 43. 11. 16. 23.

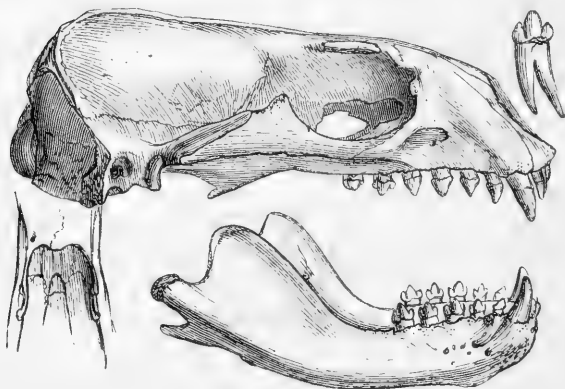
336 *f.* Skull of above; forehead broken; palate contracted behind; internal nostrils narrow.

Antarctic seas. 44. 4. 29. 1.

336 *a.* Skeleton of adult female. Skull with lower jaw broken. Canines, crown of grinders, and condyles small. (Fig. 15.)

Arctocephalus Hookeri, Gray, *Voy. Erebus & Terror*, t. xv. (skull); *Cat. Mamm. Brit. Mus.* p. 40, fig. 15 (skull); *Cat. Seals & Whales*, p. 47, fig. 17 (skull).

Fig. 15.



Phocarcetos Hookeri.

Antarctic Expedition. 43. 11. 25. 2.

Presented by the Lords of the Admiralty.

336 *b.* Skeleton of a young male, with skull. Canines, crowns of grinders, and occipital condyles large. (Pl. XX.)

Antarctic Expedition. Presented by the Lords of the Admiralty.

336 *e.* Skeleton of a young male, with skull. Zygoma imperfect; canines, crowns of grinders, and occipital condyles large.

New Zealand. 51. 7. 18. 48.

Presented by Sir G. Grey.

2. *PHOCARCTOS ELONGATUS*.

Eumetopias elongatus, Gray, *P. Z. S.* 1873, p. 776, figs. 1 & 2.

1320 *c.* Skull, with lower jaw, nearly adult, elongate. Palate produced and narrowed behind. (Pl. XXI.)

Eumetopias Stelleri, Gray, *P. Z. S.* 1872, p. 737, fig. 1 (head), figs. 2 & 3 (skull).

Otaria Stelleri, Schlegel, *Faun. Japonica*, tab. xxii. figs. 5 & 6 (?).

Japan (*A. Adams*).

1320 *d.* Skull, young, short. Palate short, broadly truncated behind. (Pl. XXII.)

Eumetopias elongatus, Gray, *P. Z. S.* 1873, p. 776, figs. 1 & 2.

Japan (*A. Adams*). 73. 10.

In the older specimens of *Phocarcos elongatus* the four middle cutting-teeth occupy three fourths of an inch at their base, but in the young skull they only occupy rather less than five eighths of an inch; but the difference may be allowed for in the dilatation of the intermaxillary bone during growth.

The lateral cutting-teeth and the canines greatly increase in size as the animal grows; whereas the space between the outer edge of the canines is $1\frac{1}{2}$ inch in the young, it is $2\frac{1}{4}$ inches in the larger specimen, and they are still being enlarged.

The skull said to have come from Japan is light and thin, and the sutures are still visible. The width at the condyles of the lower jaw is considerably less than the length from the front cutting-teeth to the tubercles on the side of the hinder nasal opening. The grinders have elongated conical rather compressed crowns and a distinct basal collaret; the fifth hinder one is more compressed, and only separated from the fourth by a space about as wide as the fifth tooth. This tooth has a compressed and very indistinctly divided base, very unlike the two diverging and unequal lobes of the adult skull. The lower jaw is much dilated in front, and very obliquely truncated and swollen, having a very different appearance from that of the adult animal. The grinders are rather elongate-conical, without any or only a slight lobe on the front of the collaret, the fifth or hinder grinder, with a smaller more compressed crown, having a lobe on the front and hinder edge. The canines are large, rather compressed, with a sharp cutting-edge on the hinder side; the outer upper cutting-teeth are large, nearly half the size of the canines; the crown of the grinders is elongate-conical, all these parts being much more acute and compressed than in the adult skull, the teeth becoming thicker and more cylindrical with age.

The skull from Japan is 11 inches long, and $5\frac{1}{2}$ inches broad at the condyles of the jaws; lower jaw $7\frac{1}{2}$ inches long. The skull of the very young is $7\frac{1}{2}$ inches long and $4\frac{1}{2}$ inches broad.

I placed this species, when I first described it from a single full-grown skull, in the genus *Eumetopias*, because it had a space in the place of the fifth upper grinder, as in that genus, pointing out how it differed from *Eumetopias Stelleri* (*P. Z. S.* 1872, p. 738); but we have since then purchased a small skull of a young animal coming from Japan, and taken by the same person who collected the larger skull; and it agrees with it in all the more important points, and only differs from it in having a shorter palate and in the form of the internal nostrils (all characters that I have found to alter with the

age of the animal), and it has the fifth grinder well developed, forming a continuous series; and in the size and form of its cutting-teeth it agrees with *Phocarcos*.

** *Head elongate; face short, arched.*

4. *CALLORHINUS*, Gray, *Cat. Seals & Whales*, p. 44; *Suppl.* p. 14.

1. *CALLORHINUS URSINUS*, Gray, *Suppl. Cat. Seals & Whales*, p. 15.

Callorhinus ursinus, Allen, *Bull. Mus. Comp. Anat. & Zool. Harvard*, ii. t. 2 & 3. figs. 1-8 (skull).

Skin of adult.

North Pacific.

Animal, adult male, stuffed.

Arctocephalus ursinus, Gray, *P. Z. S.* 1859, p. 103, pl. lxviii.

- 1221a. Skull of ditto. (Pl. XIX.)

Callorhinus ursinus, *Cat. Seals & Whales*, p. 45, fig. 16 (skull).

Behring's Straits.

Skin of young.

Arctocephalus monteriensis, Gray, *P. Z. S.* 1859, p. 358 (not skull).

A. californianus, Gray, *Cat. Seals & Whales*, p. 51.

Monterey, California.

Ursus marinus, Steller, *Nov. Com. Petrop.* ii. p. 331, t. xv., whence *Phoca ursina* of Schreber, *Säugethiere*, t. lxxxii., Pallas, *Zool. Ross.-Asiat.* i. p. 103, and Schrenck, *Amurlande*, p. 189; the Sea-bear of Forster in Cook's Second Voyage, ii. p. 203; the *Ours marin* of Buffon and Cuvier; probably *Le chat marin*, Kraschenenikow, *Hist. Kamtsch.* i. p. 316, whence *Otaria Kraschennienikovi* of Lesson. *Phoca nigra* of Pallas is probably the young of this animal. The skin and skull were described by Gray in the *P. Z. S.* 1859, p. 102, as *Callorhinus ursinus*.

Mr. Allen, in his paper on the "Eared Seals of the North Pacific," above quoted, figures the skulls of two old males and of a young female, and of another younger, only 35 days old, and the palate of another rather older female. The three youngest skulls have the internal nostrils elongate, narrow and acute in front (t. ii. figs. 8, 9, 10, t. iii. figs. 1, 2, 3); and this form is continued in two figures of older skulls (t. ii. fig. 2, t. iii. fig. 4), but the aperture is represented wider and with a rounder front edge in the oldest skull (t. ii. figs. 3 & 4).

*** *Head broad.*

5. *ARCTOCEPHALUS*, Gray, *Cat. Seals & Whales*, p. 47; *Suppl.* p. 17.

Skull broad behind, tapering in front; palate narrow. The sixth upper grinder quite behind the hinder edge of the zygomatic arch.

Grinders of upper jaw compressed, with an elongate triangular central crown, with a collaret on the inner side, and a small lobe on the back and often on the front of the collaret; lower grinders broad, with a small central longitudinal ridge divided into three small lobes, the central one being the largest; the fifth and sixth upper grinders thickened, callous, slightly divided into two roots.

The difference in the shape of the lower grinders had escaped my observation, for in the two adult skulls which we have in the British Museum the crowns have been mostly broken off or chipped; but on very minute examination I find the crowns of two or three teeth in one specimen perfect, and they present a decided difference in structure from those of all the other Sea-bears.

1. *ARCTOCEPHALUS ANTARCTICUS*, Gray, *Suppl. Cat. Seals & Whales*, p. 17; *P. Z. S.* 1872, p. 655.

Animal, adult male, with slight mane, stuffed.

South Africa.

Animal, without mane, stuffed.

South Africa.

Skin, young; length 18 inches.

Cape of Good Hope.

1220*a*. Skull, adult, with tubercle on side near occipital crest; teeth worn.

Cape of Good Hope.

1220*b*. Skull, adult; 11 inches long. (Pl. XXIII.)

Cape of Good Hope. - 59. 2. 23. 4.

Furrier's skin.

"Large wig," Gray, *Suppl. Cat. Seals & Whales*, p. 19.

Cape of Good Hope.

Furrier's skin.

Gray, *Suppl. Cat. Seals & Whales*, p. 19.

Cape of Good Hope.

Furrier's skin.

"Black pup," Gray, *Suppl. Cat. Seals & Whales*, p. 19.

Cape of Good Hope.

A dressed furrier's skin.

Cape of Good Hope.

The Sea-bear of the Cape was first noticed by Forster, who called it *Phoca ursina*; then by Thunberg as *Phoca antarctica*; then by Cuvier as the *Otaire du Cap* (*Oss. Foss.* v. p. 220), who figured an adult skull, t. xviii. fig. 5; and it was named *Otaria Delalandii* by Frédéric Cuvier, and the skull is figured by him in his memoir on the skulls of Seals under the name of *Arctocéphale*, considering the species as *Phoca ursina*. A. Smith, in the 'South-African Quarterly Journal,' described the Cape Seal as *Otaria Peronii*. In the *P. Z. S.*

1859 I figured the adult skull (t. lxix.), under the name of *Arctocephalus Delalandii*. *Le petit Phoque* figured by Buffon, said to come from India, is probably the young of this species; and this account of the animal has given rise to *Phoca parva*, *Phoca pusilla*, and *Phoca Peronii*.

6. EUOTARIA.

Arctocephalus, sp., Gray, *Suppl. Cat. Seals & Whales*, p. 17.

Skull depressed, broad behind. The sixth upper grinder quite behind the hinder edge of the front of the zygomatic arch. The grinders of the upper and lower jaw compressed, with an elongate triangular central crown, with a collaret on the inner side, and with a small lobe on the back and often on the front edge. The fourth, fifth, and sixth upper grinders with two diverging roots.

The adult skulls of the *Euotariæ* in the British Museum, as distinguished from the larger species from the Cape, are of about the same state of development, and they are probably nearly all of the same sex. They all have the palates well formed and the occipital and frontal ridges well developed; but the bones are not very completely united, and the teeth are in nearly the same state of development.

The six cutting-teeth in *Euotaria nigrescens*, Falkland Islands, and *E. cinerea*, New Zealand, occupy the same space, and are much of the same size, 1 inch wide. In *Euotaria latirostris* (1013d) the cutting-teeth occupy a larger space, 1 $\frac{3}{8}$ inch, the chief difference being in the separation of the four middle cutting-teeth. There are several other differences in these skulls.

* Skull broad. Palate of the adult skull suddenly contracted behind the last grinder. Opening of the internal nostril narrow.

1. EUOTARIA CINEREA.

Grinders short and thick; crown short.

Sea-bear, *Cook's Second Voyage*.

Phoca ursina, John R. Forster, *Descriptio Animalium*, p. 64.

Ours marin, Buffon, *Hist. Nat. Suppl.* vi. p. 336, t. 47.

Otaria cinerea, Péron, *Voy. Terr. Austr.* ii. pp. 54?, 77; *Desmarest, Mamm.* p. 251; *Quoy et Gaim. Voy. de l'Astrolabe, Mamm.* p. 89, t. 12, 13, & 15; *Peters, Monatsb.* May 17, 1866, p. 272.

Phoca cinerea, Fischer, *Synopsis*, p. 233.

Otarie (Ours du M. Gaimard), Cuvier, *Oss. Foss.* v. p. 222.

Otaria Lamairii, J. Müller, *Wiegmann Arch.* 1841, p. 334.

O. ursina, Nilsson, *Monogr.* p. 332.

O. Forsteri, Lesson, in *Dict. Class.* xiii. p. 421.

Phoca Forsteri, Fischer, *Synopsis*, p. 232.

Arctocephalus Forsteri, Gray, *Suppl. Cat. Seals & Whales*, p. 25.

Otaria (*Arctocephalus*) cinereus, Peters, *Monatsb.* 1866, pp. 272, 671.

Arctocephalus cinereus, Allen, *Bull. Mus. Comp. Anat.* ii. p. 45?

(not *Gray, Suppl.*); *Hector, New-Zeal. Institute*, iv. t. xii. fig. 1, p. 193 (skull); *Gray, P. Z. S.* 1872, p. 656, figs. 1 & 2 (skull, misnamed *A. nigrescens*).

Hub. Port Western, N. H. (*Quoy*); Dusky Bay, New Zealand (*Forster*).

1484c. Skull of male; nose broken, some teeth lost. (Pl. XXVI.)

Arctocephalus nigrescens, *Gray, P. Z. S.* 1872 p. 656 (fig., but not description).

New Zealand. 72. 6. 25. 1.

Presented by Dr. Hector.

The figures of the skulls in the *P. Z. S.* 1872, pp. 656, 657, are wrongly named. Figs. 1 & 2, said to be *A. nigrescens*, Falkland Islands, should be *A. cinereus*, New Zealand; and figs. 3 & 4, said to be *A. cinereus*, New Zealand, should be *A. nigrescens*, Falkland Islands. The skull of *E. cinerea*, from New Zealand, is $9\frac{1}{2}$ inches long, $5\frac{7}{8}$ inches wide at the zygoma; lower jaw 5 inches long, 3 inches broad at the angle. The upper cutting-teeth, occupying 1 inch, very similar to those of *E. nigrescens*. The canine teeth large, broad at the base, the outer sides of the upper ones $2\frac{1}{4}$ inches apart. The grinders of the upper jaw with broad square roots, the three hinder not so completely divided as in the other two species; the series $2\frac{1}{2}$ inches long. The palate with the suture between the pterygoid and maxillary bones broad in front, and rather in front of the hinder edge of the front of the zygomatic arch. The lower jaw elongate, $6\frac{1}{2}$ inches long, not nearly so wide apart at the angles as the length from the angle to the gonyx. The series of lower grinders shorter than the series of those of *E. nigrescens*, and with shorter crowns. The southern Sea-bear was observed in Cloudy Bay, in 1773, in Cook's second voyage, where an account of it is given. Several beautiful drawings of the animal were made for Sir Joseph Banks, which are now with the rest of his drawings in the Botanical Department in the British Museum. Dr. J. R. Forster wrote a description of the animal, which was published by the Berlin Academy in an octavo volume under the title of 'Forster's Descriptio Animalium' (p. 64). Forster sent copies of the figures and notes of the animal to Buffon, which were engraved and the notes published in the sixth volume of the 'Supplement' of his 'Natural History' (p. 336, tab. xlvii.) under the name *Ours marin*, under which name Buffon combined the Arctic and Antarctic Sea-bears. Lesson, in his compilation on Seals, called the species *Otaria Forsteri* (Diction. Class. d'Hist. Nat. vol. xiii. p. 421); and Fischer notices it in his 'Synopsis' as *Phoca Forsteri* (p. 232), and, curiously enough, adds, "An non potius generi *Enhydris* adnumeranda?" Not being able to see any specimen or skull of this species so that I could identify it with my species in the British Museum, and Forster's description of the skull and teeth only showing that it was a species of *Arctocephalus*, I recorded it under the name *Arctocephalus Forsteri* in the 'Annals and Magazine of Natural History' for 1869 (iv. p. 269), and in the 'Supplement to the Catalogue of Seals and Whales,' published in 1871.

Dr. Hector, after my repeated inquiry for the New-Zealand Seabear, was so fortunate as to kill several specimens of this animal, and has most kindly sent to the British Museum an adult skull of those which he had procured.

I have compared the adult skull sent by Dr. Hector with the figure of the skull of the adult male in Quoy and Gaimard's 'Voyage de l'Astrolabe,' 1824, tab. 13. figs. 1 & 2; and I believe that they represent the same species, though there is a slight difference in the position of the grinders as compared with the skull, which has the front edge of the fourth grinder even with the back part of the large aperture in front of the zygomatic arch, whilst in the figure the front edge of the fifth grinder appears to be in this situation; but this may only be a want of accuracy on the part of the artist. I have little doubt that Quoy's animal from Port Western and the New-Zealand one are the same; but it is a matter of doubt if the animal figured by Quoy is the *Otaria cinerea* of Desmarest's 'Mammalia,' pp. 251, 348, from Péron and Lesueur's 'Voyage,' tab. ii. p. 75, who received it from Kangaroo Island; for I am not aware that Péron brought home any specimen. It is certainly not the same as *Arctocephalus* (*Gypsophoca*) *cinerea* in the British-Museum Catalogue, described from Mr. Macgillivray's specimens.

The New-Zealand skull is very like the skull of the Southern Fur-Seal (*Arctocephalus nigrescens*) from the Falkland Islands and the south-west coast of Patagonia. It differs in the position and form of the grinders, and in the form of the palate, and its contracted sides and truncated hinder part; it differs considerably from it in the outline and prominence of the temporal bullæ and the os petrosum. The upper surfaces are very much alike, and the orbits are very large and of the same size. The lower jaws are very similar; but the callosity of the Falkland-Island specimen is rather longer, and the crown of the teeth is longer and rather more slender—the crown of the New-Zealand specimen being as long as broad, that of the Falkland-Island specimen being one third longer than broad.

2. EUOTARIA NIGRESCENS.

Arctocephalus nigrescens, Gray, *Suppl. Cat. Seals & Whales*, p. 20; *P. Z. S.* 1872, p. 657, figs. 3 & 4 (skull, wrongly named *A. cinereus*).

The grinders compressed; crown elongate.

Animal, stuffed.

1013*a*. Skull. (Pl. XXVIII.)

Arctocephalus nigrescens, Gray, *Zool. Ereb. & Terror* (ined.).

Euotaria nigrescens, Gray, *Ann. & Mag. N. H.* 1868, i. p. 106.

Arctocephalus cinereus, Gray, *P. Z. S.* 1872, p. 657, figs. 3 & 4 (not description).

Falkland Islands (*Abbott*).

1013*b*. Animal, with skull, stuffed.

Falkland Islands.

1311*a*. Animal, very young, stuffed.

Skull of above.

Arctocephalus falklandicus, *Gerrard, Cat. Bones*, p. 147.

Falkland Islands.

Presented by Sir J. Richardson.

1013*f*. Animal, young, stuffed.

Hab. Not recorded.

Presented by General Hardwicke.

1013*e*. Skull, very young. (Pl. XXIX.) The lower jaw broken on one side, with some of the milk-teeth left, and the other set below the gums. Mus. Utrecht. 67. 4. 12. 205.

The milk-grinders in both jaws with lanceolate crowns and very slight indications of side-lobes.

The skull of *E. nigrescens*, which Mr. Abbott brought from the Falkland Islands, is about 9 inches long; but the occipital bone and condyles are wanting, so I cannot be sure of its length. It is $5\frac{1}{4}$ inches wide at the condyles. The muzzle is comparatively narrow. The upper cutting-teeth occupy 1 inch, and are very similar to those of *E. cinerea*. The lateral cutting-teeth and canines are elongate and moderately strong; the outer sides of the canines are $1\frac{3}{4}$ inch apart. The upper grinders have rather compressed roots, and the three hinder have two very distinctly divided roots; the crowns are rather narrow and elongate. The series is $2\frac{3}{5}$ inches long. The palate with the suture between the broad pterygoid and maxillary bones rounded in front of the hinder edge of the zygomatic arch. The lower jaw is short, 6 inches long, widely diverging, as wide apart at the angles as the length from the angle to the gonys. The lower grinders with elongated crowns, and the series not quite so long as in *E. cinerea*.

In the very young skull of the Sea-bears (*Arctocephalus*) the hinder opening of the palate is far back; but as the animal grows the palate contracts behind, and the space between the hinder grinder and the opening is considerably elongated and narrowed, and the opening, which is broad and short in the young animal, becomes narrow and elongate in the adult.

In the palate the hinder opening of the nostrils is, in the very young Sea-bear, much nearer to the condyle, and becomes further from it as the animal grows older, so that the skulls of the very young have an affinity in this respect with the skulls of the *Otarie*; but in the very youngest animal they are a considerable distance behind the condyle.

3. EUOTARIA LATIROSTRIS.

The upper cutting-teeth forming a broad line.

1013*d*. Skull of adult, without lower jaw and without any teeth. (Pl. XXVII.) The cavities for the canines very large, those for the cutting-teeth forming a wide series, and of the grinders small, narrow.

Arctocephalus nigrescens, *Proc. Zool. Soc.* 1872, p. 656 (not figure).

Falkland Islands? (*Zool. Soc.*). 55. 12. 26. 167.

The length of the line of the cutting-teeth enlarging to any considerable extent is inconsistent with what we know of the difference between male and female, and of the changes that occur in these teeth during growth of the animal. Therefore I believe that this skull may belong to a different species from any of which we have the skulls already.

The habitat, being that noted in the Museum of the Zoological Society at a time when habitats were not particularly observed, may be erroneous. The skull may belong to the *Arctocephalus falklandicus*, of which the skull is not known, or it may be a distinct species.

It was from this skull that I thought the width of the series of the cutting-teeth was the character of *A. nigrescens* (P. Z. S. 1873, p. 655), but I think it is better to take the character of the species from a well-ascertained skull.

The skull without lower jaw (1013*d*) is $9\frac{1}{2}$ inches long and $5\frac{3}{4}$ inches wide at the condyles, and is without any teeth; the cavities for the upper cutting-teeth are very distinct and occupy a line of $1\frac{3}{8}$ inch, the outer ones being larger and compressed; the front of the upper jaw is much broader than in *E. cinerea* or *E. nigrescens*. The cavity for the canines is large and circular, and the outsides of the canines are $2\frac{1}{4}$ inches apart. The series of grinders occupy a line $2\frac{1}{8}$ inches long: the cells left for the first three are broad, oblong, and of the last three are compressed, divided into two cavities by a central cross septum, of the sixth very small; they are like *A. cinerea*, but rather smaller. The palate with the suture between the rather narrow pterygoid and maxillary bones rounded in front, and level with or rather behind the hinder edge of the front of the zygomatic arch.

The skull of this species is figured in an unpublished plate of the 'Zoology of the Erebus and Terror,' and described P. Z. S. 1859, pp. 107 & 360, Ann. & Mag. Nat. Hist. 1868, i. p. 106.

**** Skull elongate, zygoma flat externally. Palate of the adult skull gradually and slightly narrowed behind the last grinder. Opening of the internal nostril broad, rounded in front.**

4. EUOTARIA COMPRESSA.

Skull elongate, zygoma flattened at the sides; palate broad, gradually wider behind to the end of the last grinder, then slightly narrowed, with a large broad internal opening to the nostrils, which is rounded in front. The last upper grinder rather distant from the others, and directed backwards.

1020*d*. Skull of an adult male, $9\frac{1}{2}$ inches long, $5\frac{5}{8}$ inches wide.

Forehead much broken. Canine teeth and outer upper grinders large. (Pl. XXIV.)

South Africa? (*Warwick*). 48. 10. 12. 22.

5. EUOTARIA SCHISTHYPEROËS.

Arctocephalus schisthyperoës, *Turner, Journ. Anat.* 1868, p. 113, fig. (front of palate).

A. schistuperus, *Günther, Zool. Record*, 1868, p. 20.

A. Delalandii (young), *Gray, Ann. & Mag. Nat. Hist.* 1869, iv. p. 265.

A. antarcticus (young), *Gray, Suppl. Cat. Seals & Whales*, p. 17.

1020 *c.* Plaster cast of the typical skull of a female, described by Prof. Turner. Canines slender; palate narrow, imperfectly developed behind, leaving a large elongate hinder opening to the nostrils. (Pl. XXV.)

Cape of Good Hope.

Presented by Prof. Turner.

This may be the female of *Euotaria compressa*, as the palate is only slightly contracted behind the last grinder; but it differs in the palate being very narrow in front, and it is imperfectly developed behind, and the zygoma is more convex on the sides.

I formerly thought that this skull, coming from South Africa, might be the young of *Arctocephalus antarcticus*; but having had the opportunity of examining a skull with perfect crowns to the lower grinders of that species, it shows that this cannot be the young of it, but belongs to the group *Euotaria*, which has the same conical compressed crowns to the grinders in the upper and lower jaw.

This skull somewhat resembles *Otaria Philippii* figured by Prof. Peters, Monatsb. 1866, tab. 2, *a, b, c*; but the teeth are very much smaller and more lobed. The lower jaw is nearly the same size as the skull figured by Dr. Peters, but the fifth lower grinder comes opposite to the fourth in his figure. The grinders in both jaws are further apart than they are in the Juan Fernandez species.

*** *Skulls unknown.*

ARCTOCEPHALUS ? NIVOSUS, *Gray, Suppl. Cat. Seals & Whales*, p. 27.

a. Flat skin without skull.

Cape of Good Hope.

This may be the skin of *Euotaria compressa* or *schisthyperoës*, which is said to come from the Cape.

ARCTOCEPHALUS ? FALKLANDICUS, *Gray, Suppl. Cat. Seals & Whales*, p. 25.

Arctocephalus Grayii, *Scott, Mamm. Recent and Extinct*, p. 10.

Arctocephalus eulophus, *Scott, l. c.* p. 19?

Animal, stuffed, without skull.

Falkland Islands?

Part of the skin of the back, with grey under-fur.

Falkland Islands (*Bartlett*). 68. 3. 17. 1.

7. *EUMETOPIAS*, *Gray, Suppl. Cat. Seals & Whales*, p. 29.

The fifth upper grinder on each side wanting, and the sixth separated from the fourth by a wide space. In the very young skull there is evidently a rudiment of a fifth upper grinder near the side of the fourth in front of the space that separates the fourth from the sixth grinder.

1. *EUMETOPIAS STELLERI*, Gray, *Suppl. Cat. Seals & Whales*, p. 30; *P. Z. S.* 1872, p. 737, figs. 1-5 (head and skull); Allen, *Bull. Mus. Comp. Anat. & Zool. Harv. t. i. & t. iii.* figs. 9-15.

Arctocephalus monteriensis, Gray, *Cat. Seals & Whales*, p. 49.

Skin, young.

1320 *b.* Skull, young.

Eumetopias Stelleri (young), Gray, *P. Z. S.* 1872, pp. 740, 741, figs. 4 & 5 (skull).

Arct. monteriensis, Gray, *P. Z. S.* 1859, p. 358.

Arct. californianus, Gray, *Cat. Seals & Whales*, p. 51.

California, Monterey (*A. S. Taylor*). 59. 11. 5. 2.

Presented by J. H. Gurney, Esq., M.P.

1320 *a.* Skull and tongue-bones, adult. 13½ inches.

Arct. monteriensis, Gray, *P. Z. S.* 1859, p. 358, pl. 72.

California, Monterey (*A. S. Taylor*). 59. 11. 5. 1.

Presented by J. H. Gurney, Esq., M.P.

The adult skull of *Eumetopias Stelleri* in the Paris Museum was figured by Pander and D'Alton, but very badly, under the name of *Phoca jubata*. This skull had been overlooked by Nilsson and others, but Dr. Peters discovered it. The specimen we received from Mr. Gurney from Monterey was figured by me under the name of *Arctocephalus monteriensis* in the *P. Z. S.* 1859, pl. 72; and at the same time I described the skull of a very young specimen under the name of *Arctocephalus californianus*, which is now in the British Museum. Allen, in his paper on the Eared Seals in the Museum of Comparative Anatomy, has given a view of the underside and posterior end of the skull of a very old and of a middle-aged male Seal, and some other details; but I am not aware that a specimen in the medium stage between the adult and very young state has ever been described or figured.

The adult Monterey skull is very heavy, and is very much wider than in the young (that is to say, the width between the zygomatic arches is the same as the length from the front upper cutting-teeth to the tubercle on the hinder part of the edge of the hinder nasal opening), the palate has much greater width than in the young and is rather contracted behind, and there is a very great space between the fourth and fifth upper grinders. The hinder grinder has a small crown and a large base, consisting of two very distinct roots, the front of which is much the largest. The grinders are much more cylindrical and have more regularly conical crowns than the younger specimen. The lower jaw is very strong and heavy, rather abruptly truncated in front, and is as high under the fifth as under the first grinder; that is to say, it is not dilated in front, but the same height the whole length. (See *P. Z. S.* 1859, pl. 72.)

Leo marinus, Steller, *Nov. Comm. Petrop.*

Phoca leonina, Pallas, *Zoograph. Rosso-Asiatica*.

The skull of Steller's specimen is in the Museum of Paris, and was figured by Pander and D'Alton (t. iii. figs. *d*, *e*, *f*) as that of *Phoca*

jubata, and a skull from California (where it is called *Lobo marino*) by Gray (P. Z. S. 1859, p. 357, t. lxxii.) as *Arctocephalus monteriensis*.

I was induced, erroneously, to describe the skull of the very young specimen that accompanied this as a species, under the name of *A. californianus*, not being aware of the change in the form of the palate.

Phoca Stelleri, Fischer, Synopsis, p. 231, was established on the *Leo marinus* of Steller; but this animal has been generally confounded with *Phoca jubata* by Gmelin and different authors.

The *Lion marin de Californie*, figured by Choris, 'Voyage Pittoresque,' t. xi., is probably from this species, and has been named *Phoca* and *Otaria californica*.

In *Eumetopias* the six upper cutting-teeth in the very young skull occupy the same space as the four middle upper cutting-teeth in the adult skull, and the outer upper cutting-teeth and the canines are very much enlarged.

In the foetal skull from California the hind upper grinder is at a considerable distance from the others, as in the very old skull in the Museum and the two adult skulls figured by Mr. Allen; but there is to be observed on each side a concavity in the place of the fifth grinder—on the right side it is a shallow, small cavity, which has enclosed a rudimentary tooth; on the other side the concavity is larger, but not so evidently the cavity for a tooth.

Mr. Allen, in the Bull. Mus. Comp. Anat. and Zool. Harvard College, U.S., vol. ii., in his account of the "Eared Seals in the North Pacific," figures the skulls and scapula of a very old and middle-aged male, showing the variation in the shape of the internal nostril.

C. The grinders $\frac{5.5}{5.5}$; the fifth upper in a line with or before the back edge of the front of the zygomatic arch.

Tribe 4. ZALOPHINA, Gray, Suppl. Cat. Seals & Whales, p. 27.

8. ZALOPHUS, Gray, Suppl. Cat. Seals & Whales, p. 27.

1. ZALOPHUS GILLIESPII, Gray, Suppl. Cat. Seals & Whales, p. 28.

Arctocephalus Gilliespii, Gray, Cat. Seals & Whales, p. 55.

1589a. Cast of skull.

Arctocephalus Gilliespii, Gray, P. Z. S. 1859, p. 110, t. 70.

[California.] Mus. Coll. Surg. Edinburgh.

1589b. Skull, $12\frac{1}{2}$ inches long, with canines very large; no other teeth; no lower jaw; frontal crest very high.

Japan. 73. 3. 12. 1.

Temminck, in the 'Fauna Japonica,' makes some observations

on the Eared Seals, and shows the inaccuracies of his predecessors. He describes one species, *Otaria Stelleri*, and observes that the plate of the entire animal was drawn from a living animal in Japan. It is very unlike the living animal of the family figured by Forster, and that was alive in the Zoological Society's Gardens. The fins look much more as if they were from a stuffed specimen made by a man who never saw a living Sea-bear. He figures the skeleton and three skulls as different ages of the same species, calling one (t. 22. f. 1, 2) from a very old, the second (t. 22. f. 3, 4) from an adult, and the third (t. 22. f. 5, 6) from a middle-aged specimen—I suppose, all from Japan; but I do not see it so stated. The first two have only five upper grinders and very differently shaped heads; the third has six upper grinders and is a *Gypsophoca*. No species has been described from the North Pacific; and it may be a new species yet undiscovered, as all the other species come from the other side of the equator.

I should, judging from the figures, regard them as belonging to two, if not three, distinct species, and the whole theory of their being different ages of the same species as a mistake arising from not studying the growth of the teeth in these animals.

The skeleton of *O. Stelleri* (t. 23) is taken from the same specimen as the skull, which he says is of a very aged individual (t. 21. f. 1, 2), and is most probably the adult of *Zalophus Gilliespii*. Skull, figs. 3 and 4, may be the young of the same species; but, unfortunately, the underside is not figured of any of these skulls, so as to show the position of the teeth in connexion with the zygoma; and figures 5 and 6 are evidently *Gypsophoca*, as above stated. (P. Z. S. 1872, p. 659.)

This species was first described by Dr. Macbain as *Otaria Gilliespii* in the Report Phys. Soc. Edinburgh, 1858, from a specimen in the Mus. Col. Surgeons, Edinburgh. He kindly sent a cast of the skull to the British Museum, which I figured P. Z. S. 1859, t. lxx., under the name of *Arctocephalus Gilliespii*. Mr. Allen has figured a skull in the Smithsonian Institution and another in the Museum of the Chicago Academy of Science, under the name of *Zalophus Gilliespii*, Bulletin Mus. Comp. Anat. ii.

9. NEOPHOCA, Gray, *Suppl. Cat. Seals & Whales*, p. 28.

The upper grinders have a conical crown, with a distinct collaret, especially on the inner side, and the four front have a tubercle on the front side of the collaret, and a very small rudimentary one on the hinder side; the fifth is wanting. The grinders of the lower jaw have a similar elongated, conical crown, with a distinct collaret on the inner side, which has a large tubercle in front and a more rudimentary one on the hinder part of the inner edge; the fifth has a distinct tubercle on the back of the front edge. The four middle cutting-teeth do not enlarge during the growth of the animal; they become rather further apart, in consequence of the dilatation of the bone, especially in the adult animal.

1. *NEOPHOCA LOBATA*, Gray, *Suppl. Cat. Seals & Whales*, p. 28.

Arctocephalus lobatus, Gray, *Cat. Seals & Whales*, p. 50; *Voy. Erebus & Terror*, t. vi. (animal), t. xvii. figs. 3 & 5 (jaws).

Zalóphus lobatus, Allen; *Scott, Mam.* p. 21.

Animal, adult, stuffed.

337 *e*. Skull of ditto, 11 $\frac{3}{4}$ inches long; face broken. (Pl. XXX.)

N.W. Australia.

Presented by His Excell. Sir George Grey, K.C.B.

Animal, half-grown, stuffed.

337 *a*. Front of jaws of ditto. 44. 3. 19. 2.

Arctocephalus lobatus, Gray, *Zool. Erebus & Terror*, t. xvii. figs. 3 & 5 (jaws).

Australia, Houtmann's Abrolhos (*Gould*). 44. 2. 15.

Animal, half-grown, stuffed. 44. 2. 15. 41.

337 *b*. Front of lower jaw of ditto. 44. 4. 10. 6.

Australia, Houtmann's Abrolhos (*Gould*).

Animal, stuffed, young. 44. 2. 15.

337 *c*. The upper and lower jaws of ditto. 44. 3. 29. 4.

Australia, Houtmann's Abrolhos (*Gould*).

Animal, stuffed.

Australia.

The upper and lower canines in 337 *c* are just appearing above the gum, and the cutting-teeth and grinders are well developed. The lobes on the collar of the grinders are much more developed and acute in the younger skulls than in the rather more adult ones.

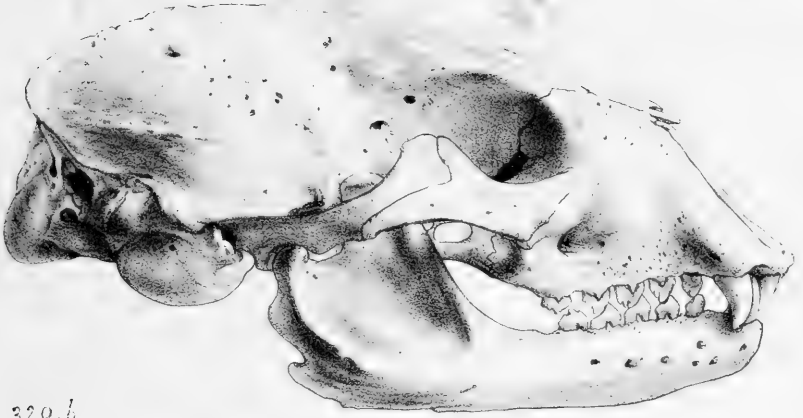
A skull of this animal was described and figured, from a specimen in Mr. Brookes's collection, under the name of *Arctocephalus lobatus*, by Gray, in the 'Spicilegia Zoologica,' i. t. (whence the *Phoca lobata* of Fischer, 'Synopsis,' ii. p. 574). This Seal was noticed by Gray in King's 'Narrative of Australia,' ii. p. 413, as *Otaria cinerea*; but it is not the animal so named by Péron. The skull was noticed as *Otaria Lamairii*, J. Müller, Wiegmann's Archiv, 1841, p. 334. Quoy and Gaimard figured (*Voy. Astrol.* t. x. and xiv.) this Sea-bear under the name of *Otaria australis*, from King George's Sound, which I named *Arctocephalus australis* (*Cat. Seals*, p. 57); and Professor Owen, in the Catalogue of the Osteological Collection in Mus. Roy. Coll. Surgeons, nos. 3964, 3965, describes the mutilated skull and lower jaws of a Sea-bear (*Arctocephalus australis*), which may belong to this species.

EXPLANATION OF THE PLATES.

—o—

PLATE I. Skull of *Callocephalus vitulinus*, adult.

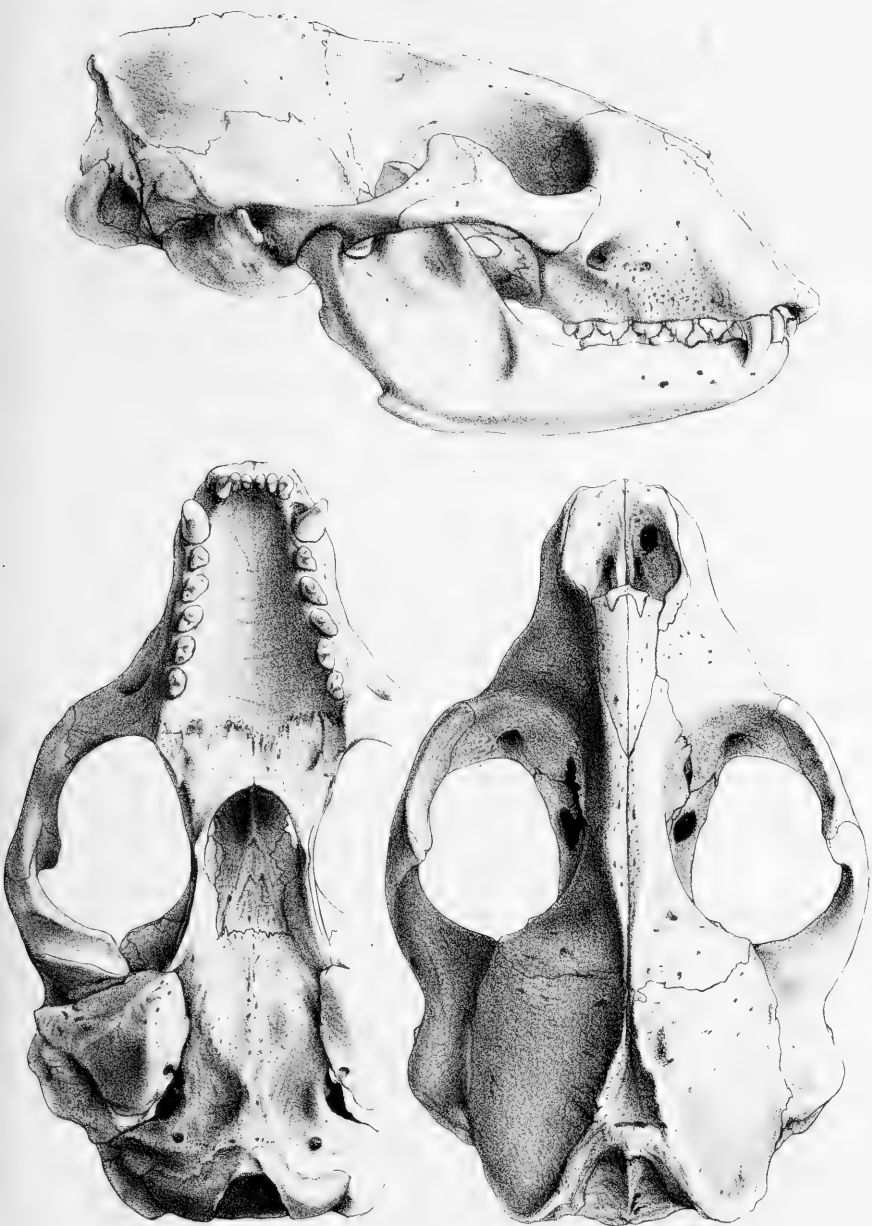
- | | | | |
|---------|---|---|------------|
| II. | „ | <i>Halicyon Richardsi</i> , adult. | Japan. |
| III. | „ | <i>Pagomys fœtidus</i> . | |
| IV. | „ | <i>Pagophilus grœnlandicus</i> . | |
| V. | „ | <i>Phoca barbata</i> , adult. | |
| VI. | „ | <i>Monachus albiventer</i> . | |
| VII. | „ | <i>Halichærus grypus</i> , jun. | |
| VIII. | „ | <i>Stenorhynchus leptonyx</i> . | |
| IX. | „ | <i>Lobodon carcinophaga</i> . | |
| X. | „ | <i>Leptonyx Weddellii</i> . | |
| XI. | „ | <i>Ommatophoca Rossii</i> . | |
| XII. | „ | <i>Morunga elephantina</i> , jun. | |
| XIII. | „ | <i>Cystophora cristata</i> , jun. | |
| XIV. | „ | <i>Otaria jubata</i> , adult male. | |
| XV. | „ | <i>Otaria jubata</i> , var.? | Patagonia. |
| XVI. | „ | <i>Otaria minor</i> . | |
| XVII. | „ | <i>Otaria ulloæ</i> . | |
| XVIII. | „ | <i>Gypsophoca tropicalis</i> . | |
| XIX. | „ | <i>Callorhinus ursinus</i> . | |
| XX. | „ | <i>Phocætos Hookeri</i> , male jun. | |
| XXI. | „ | <i>Phocætos elongatus</i> . | |
| XXII. | „ | <i>Phocætos elongatus</i> , jun. | |
| XXIII. | „ | <i>Arctocephalus antarcticus</i> . | |
| XXIV. | „ | <i>Euotaria compressa</i> . | |
| XXV. | „ | <i>Euotaria schisthyperoës</i> . | |
| XXVI. | „ | <i>Euotaria cinerea</i> . | |
| XXVII. | „ | <i>Euotaria latirostris</i> . | |
| XXVIII. | „ | <i>Euotaria nigrescens</i> . | |
| XXIX. | „ | <i>Euotaria nigrescens</i> , jun., with some of the milk-teeth remaining. | |
| XXX. | „ | <i>Neophoca lobata</i> . | |



320. h







G.H.Ford.

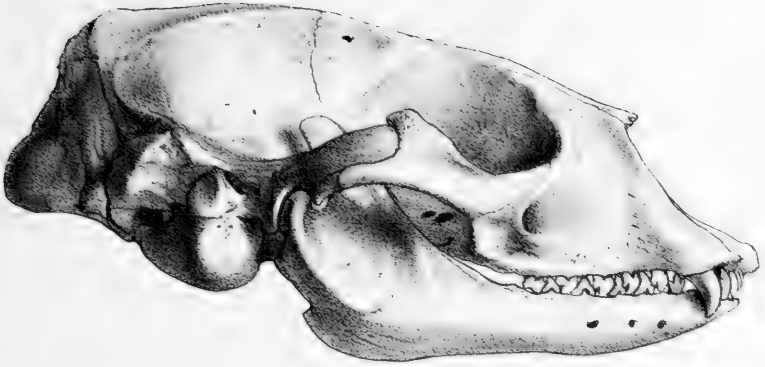
1431c.

Mintern Bros. imp

Halicyon richardsi (Japan.)







328d.

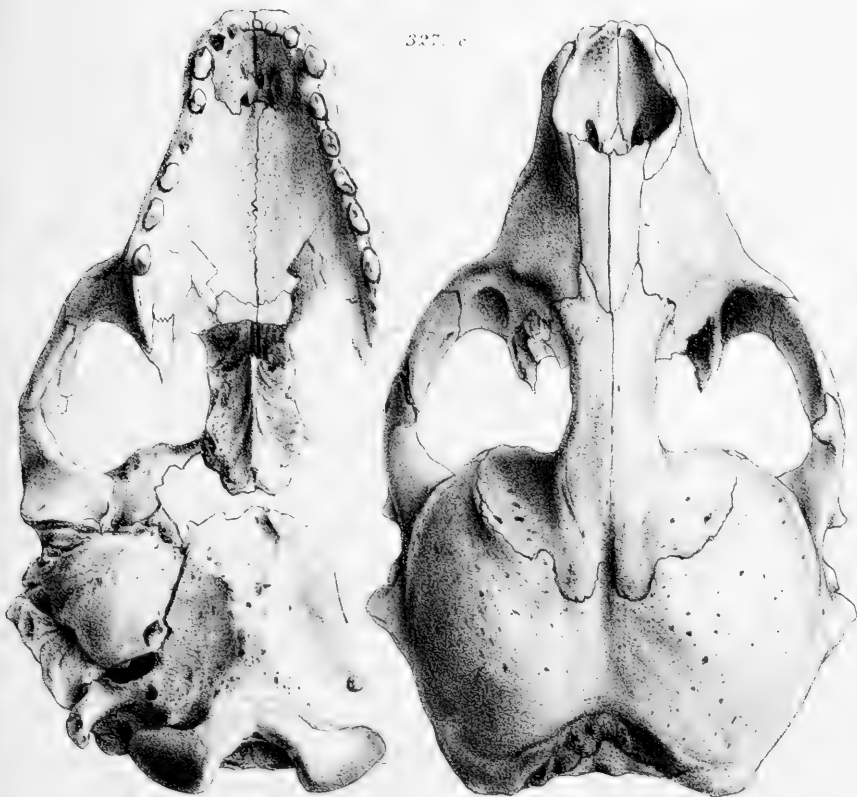
G. H. Ford & C. L. Griesbach

Miner's Bros. imp.

Pagophilus grœnlandicus.



327. c



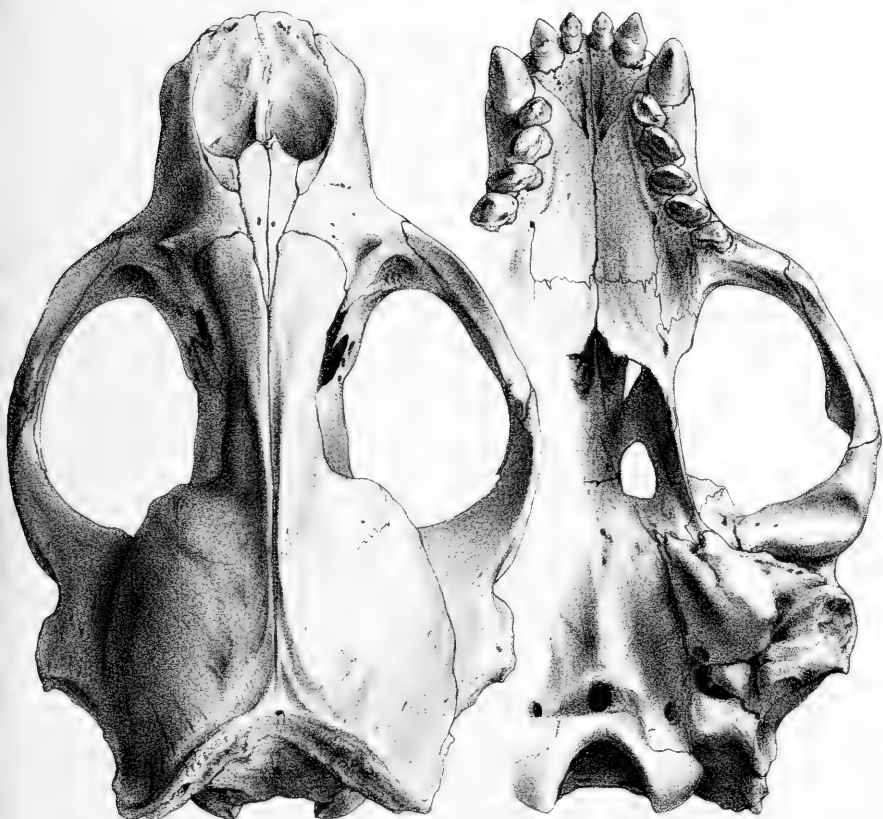
G.H.Ford & C.L.Griesbach

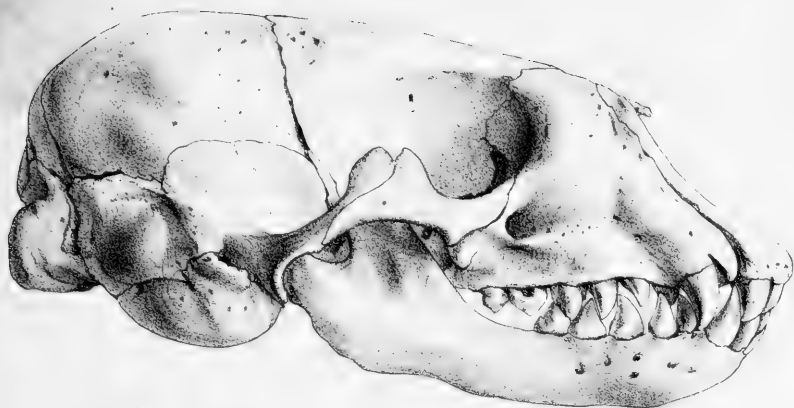
Mintern Bros imp

Phoca barbata.



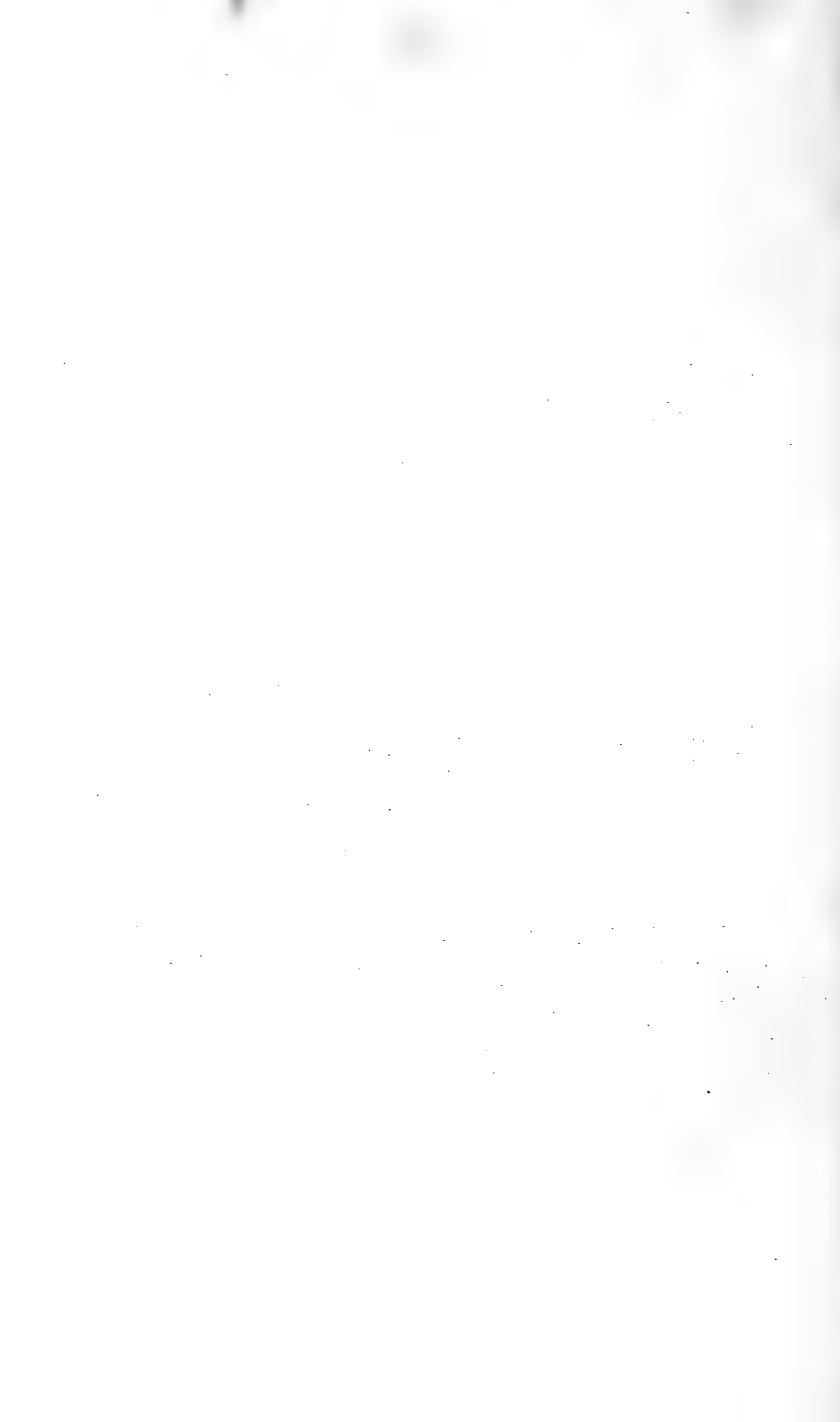
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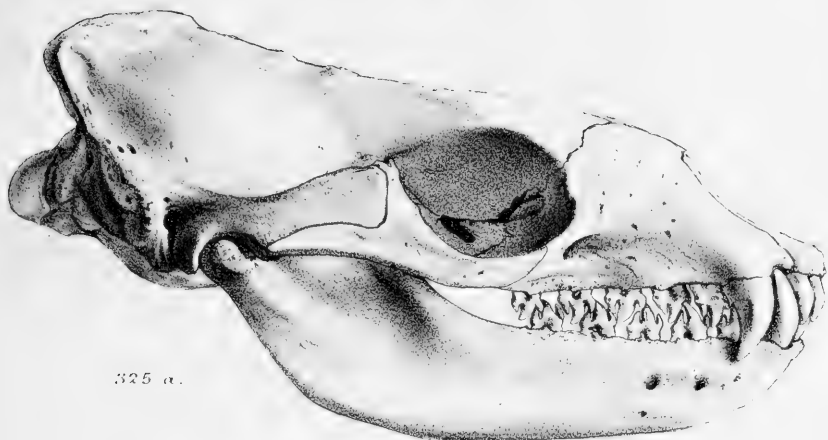




256.5







325 α.

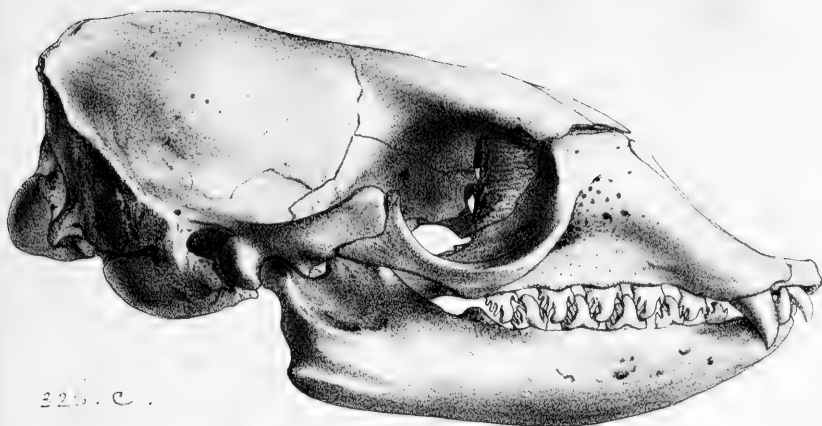


G. H. Ford & C. L. Griesbach

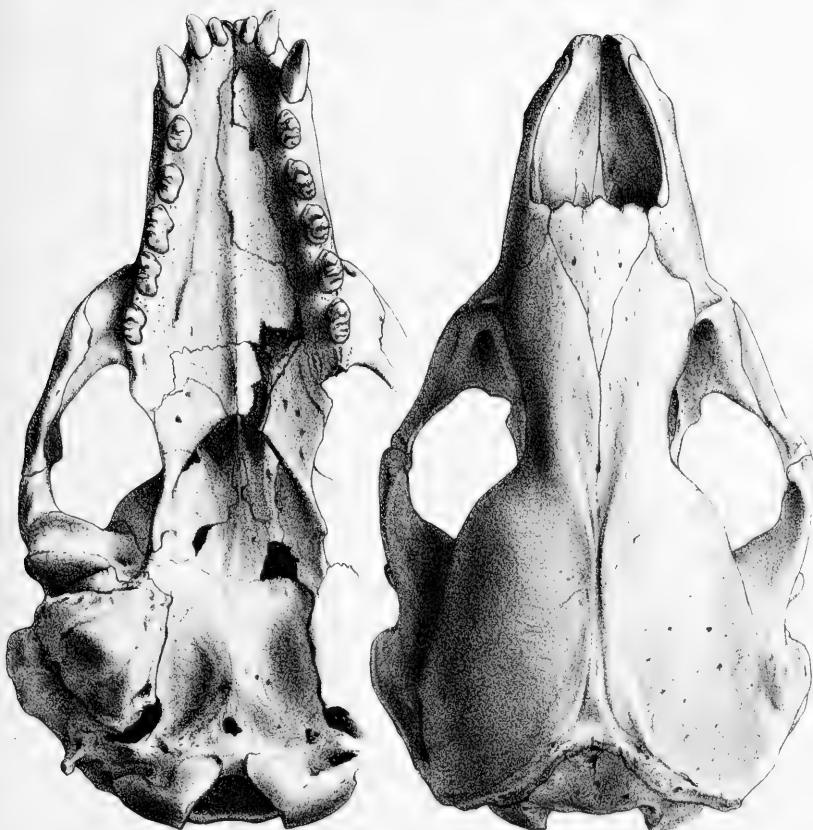
Mintern Bros. imp

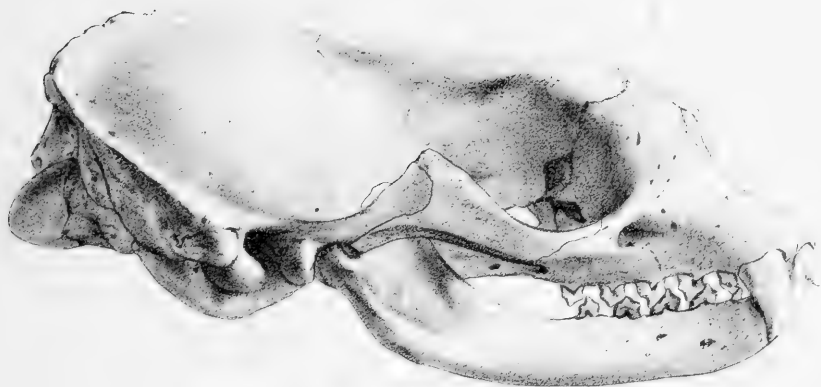
Stenorhynchus leptonyx





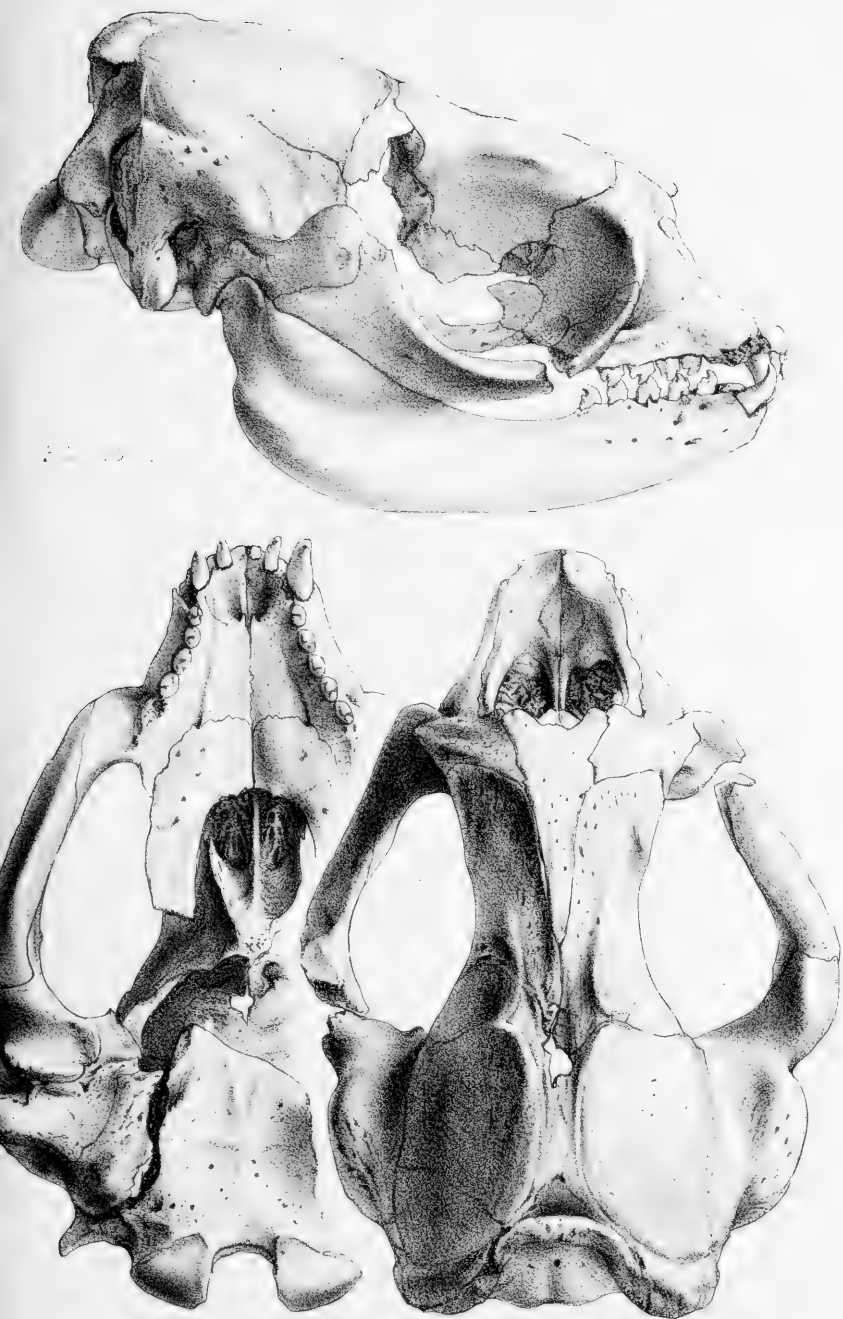
325. C.





323.





G.H. Ford & C.L. Griesbach.

Mintern Bros. imp

Ommatophoca rossii.



225. C



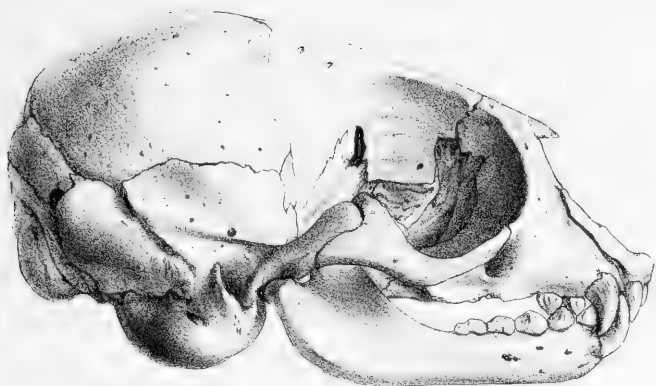
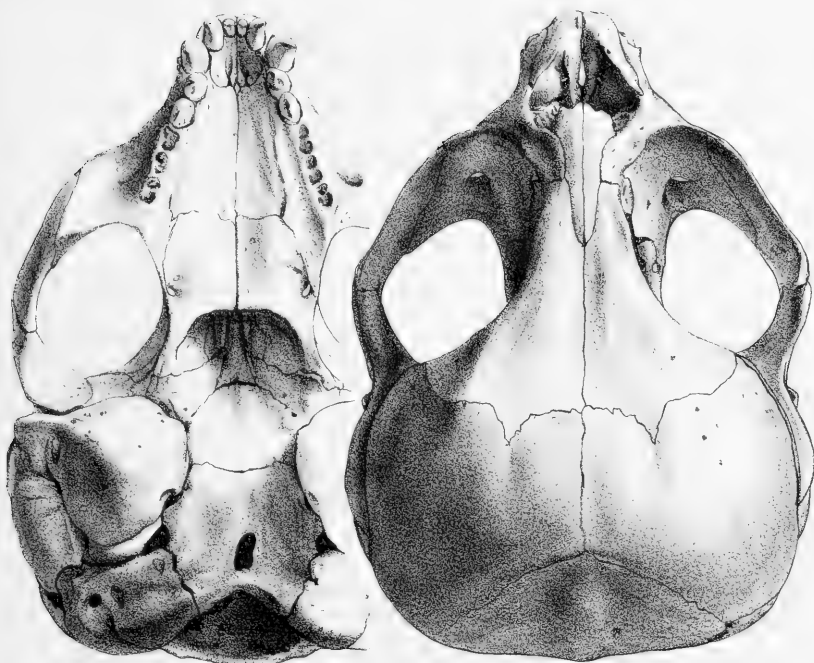
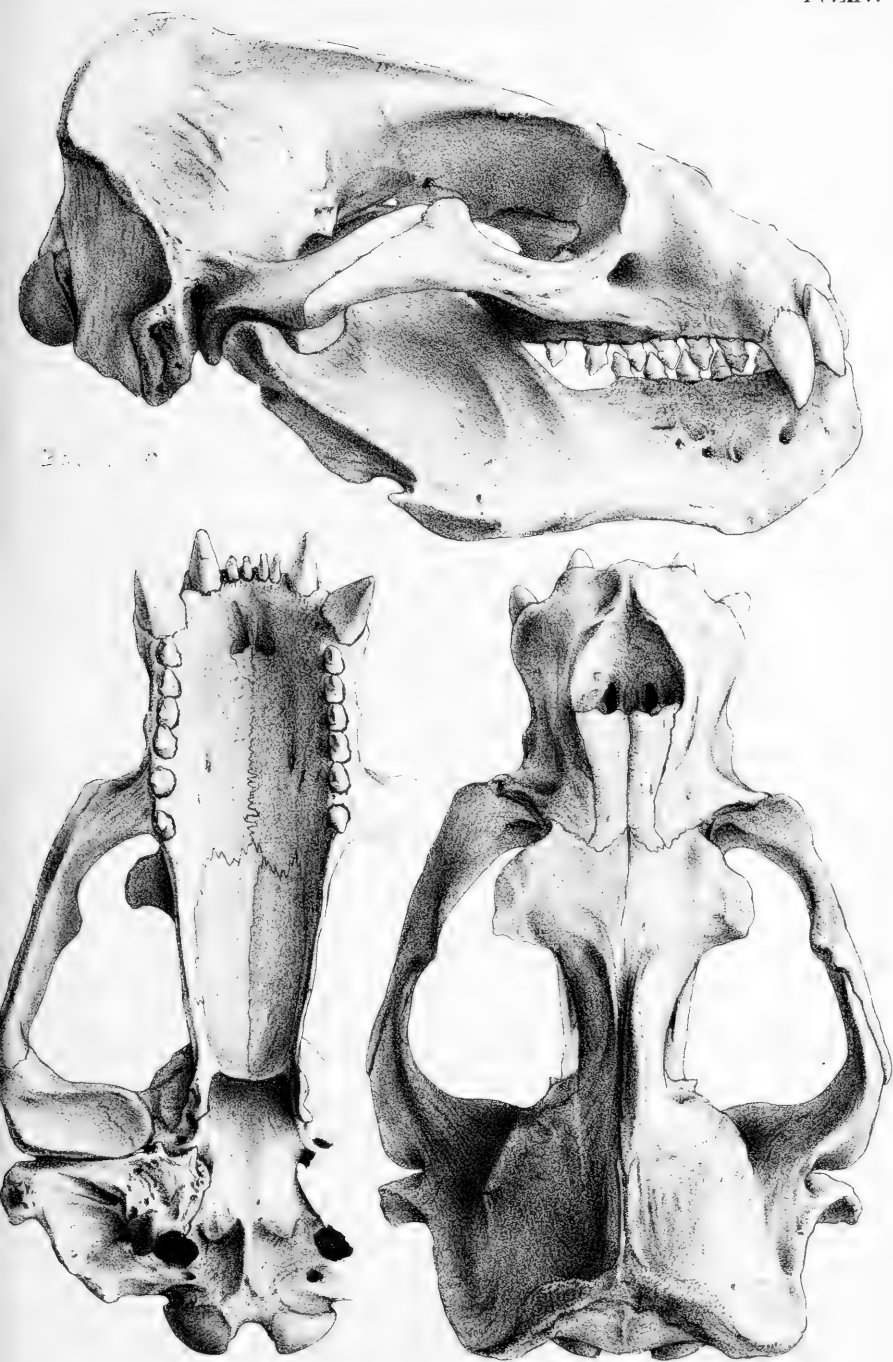


Fig. 2.



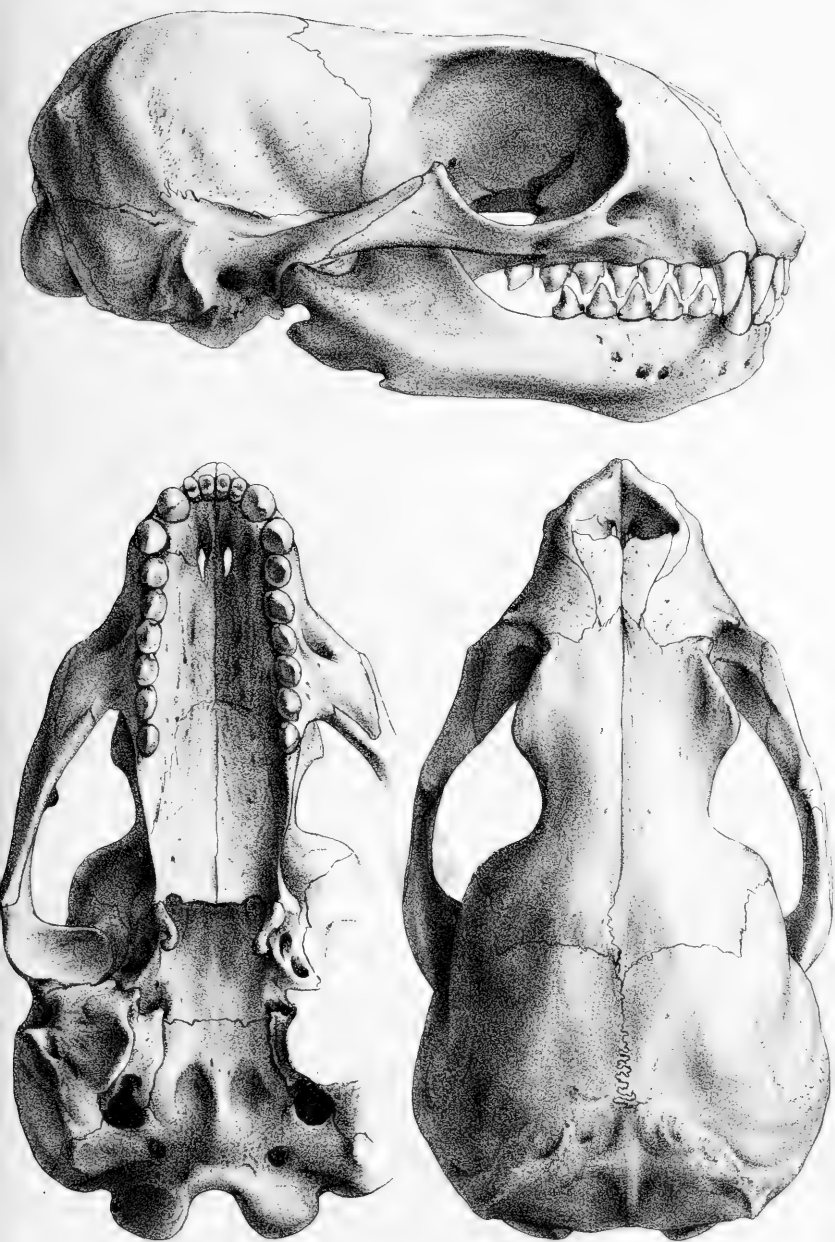


G.H. Ford & C.L. Griesbach.

Mintern Bros. imp.

Otaria jubata, adult male.



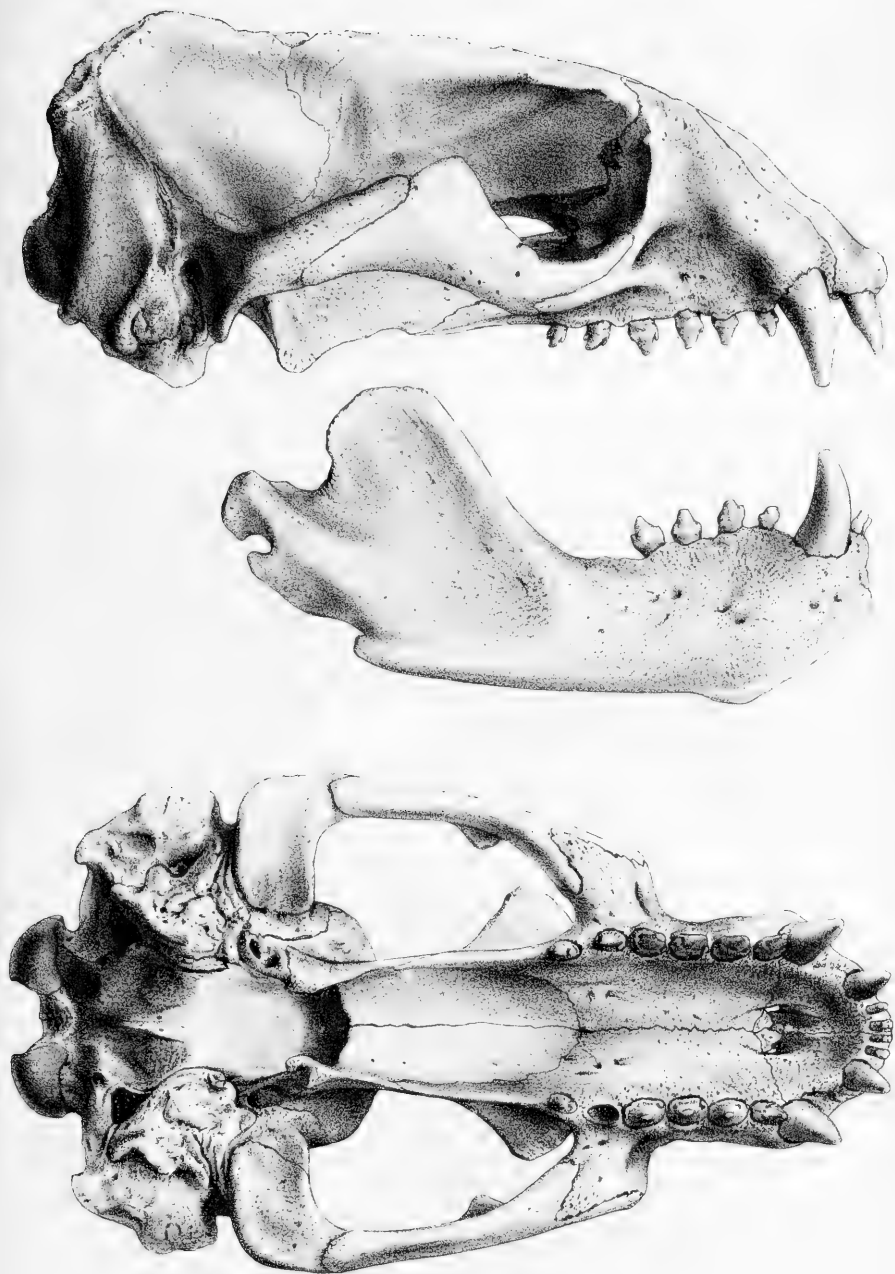


G.H. Ford & C.L. Griesbach.

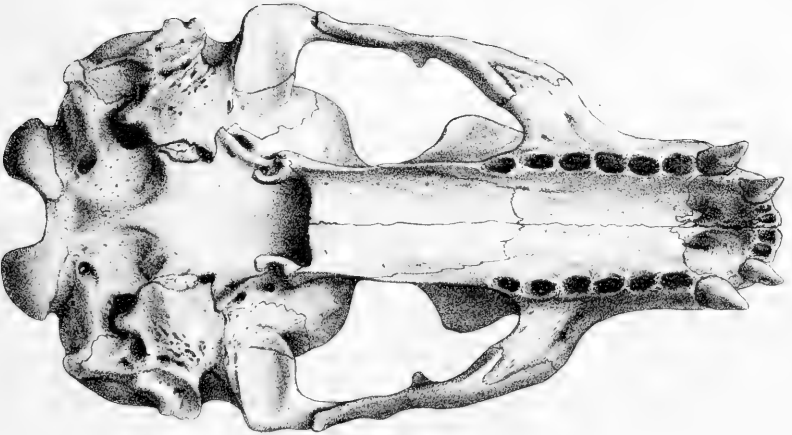
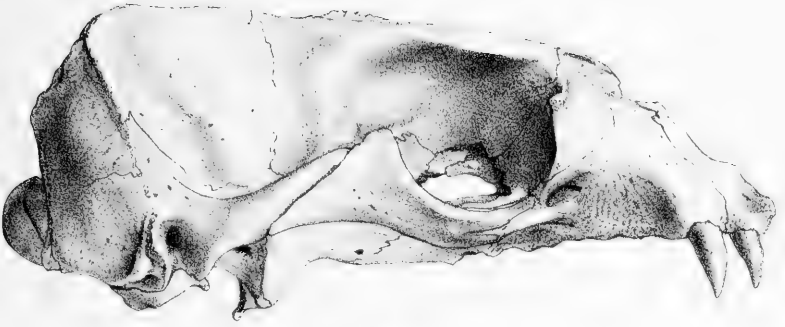
Mintern Bros. imp.

Otaria jubata.



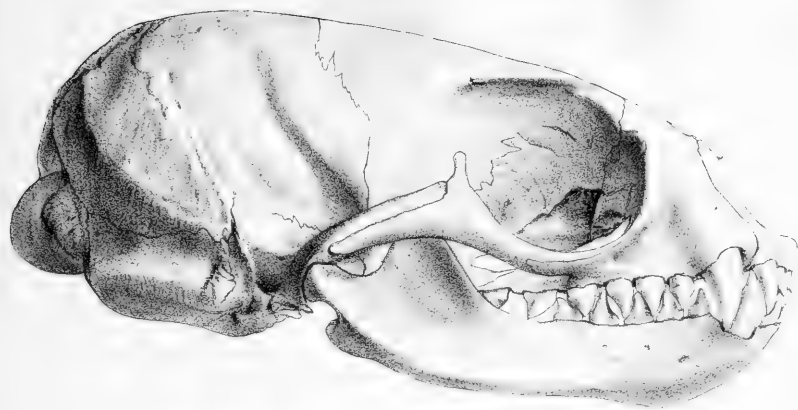




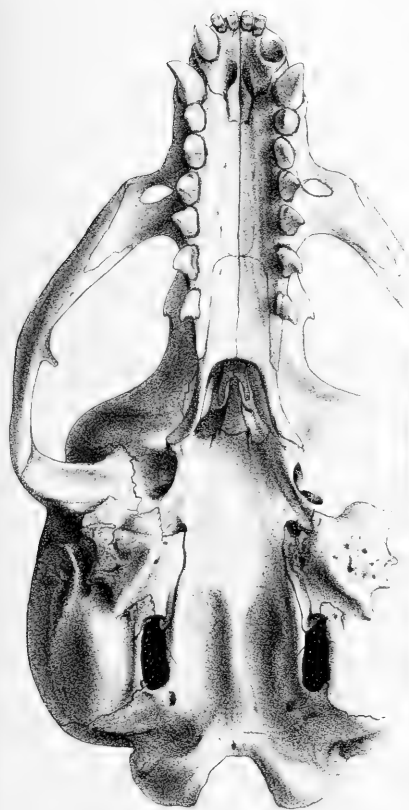


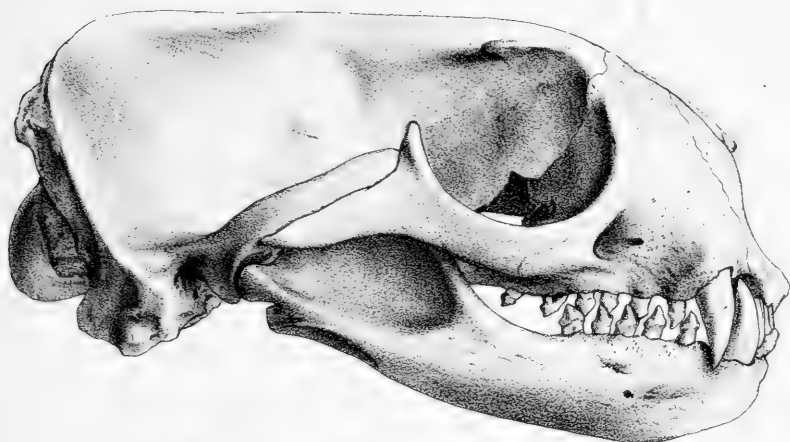
333,1





1484. a





1221 a



G.H.Ford & C.L.Griesbach

Mintern Bros. imp

Callorhinus ursinus.





336 b.

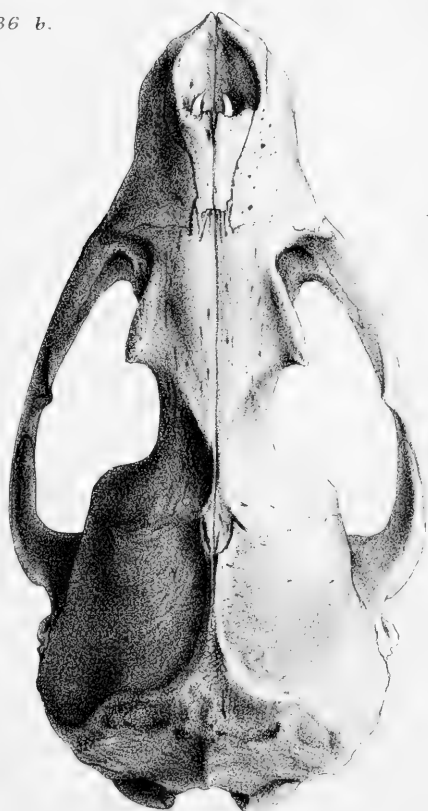
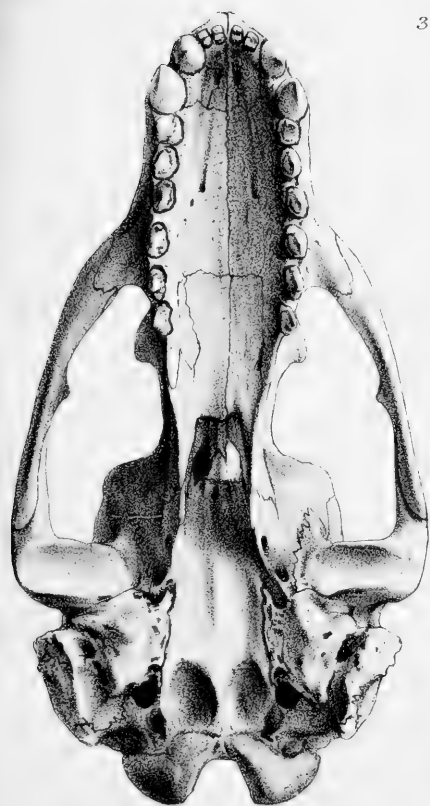
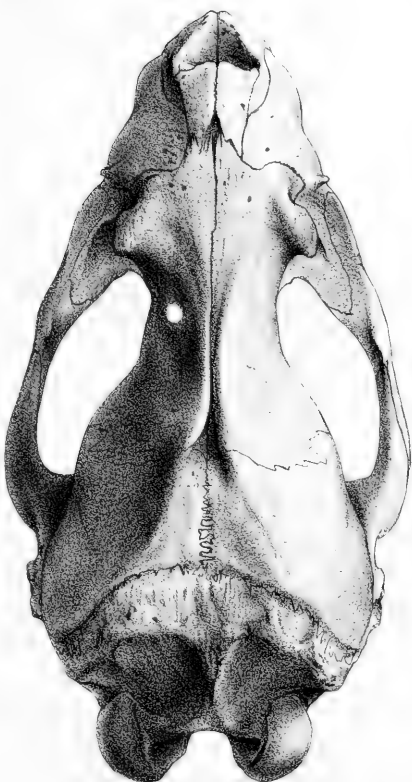
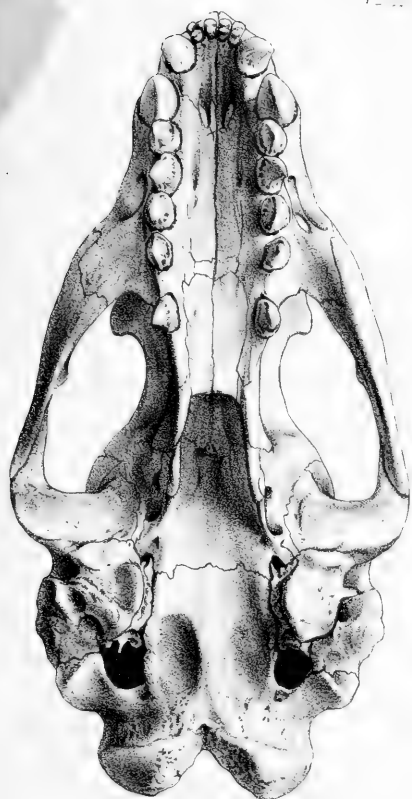






FIG. 1.





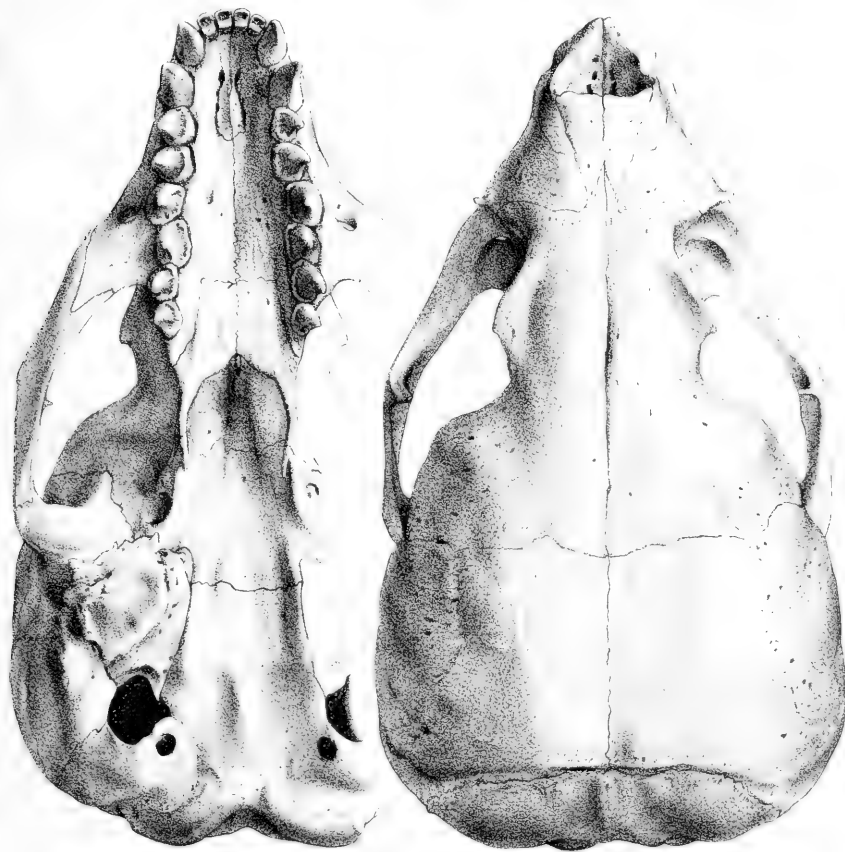






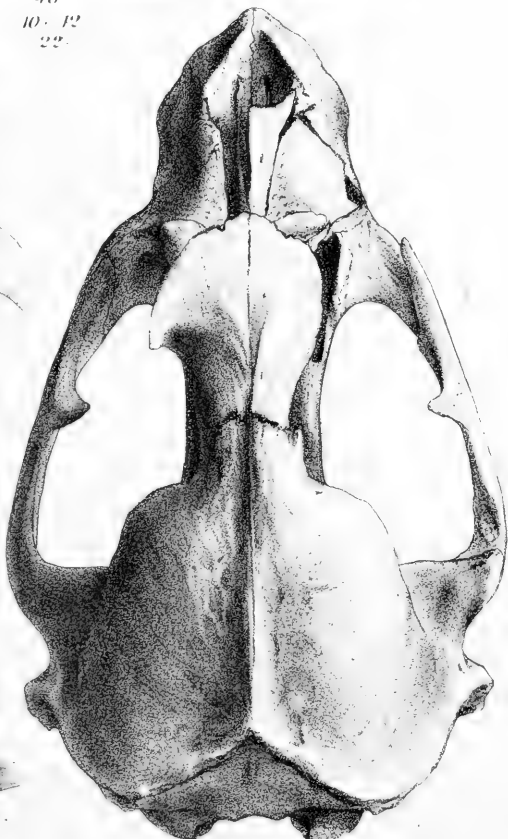
Fig. 1.



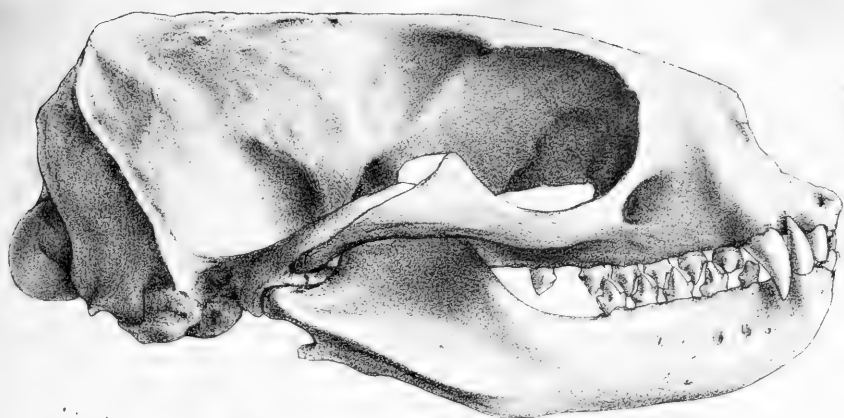




48
10. P2
22.







G.H. Ford & Ch. Griesbach.

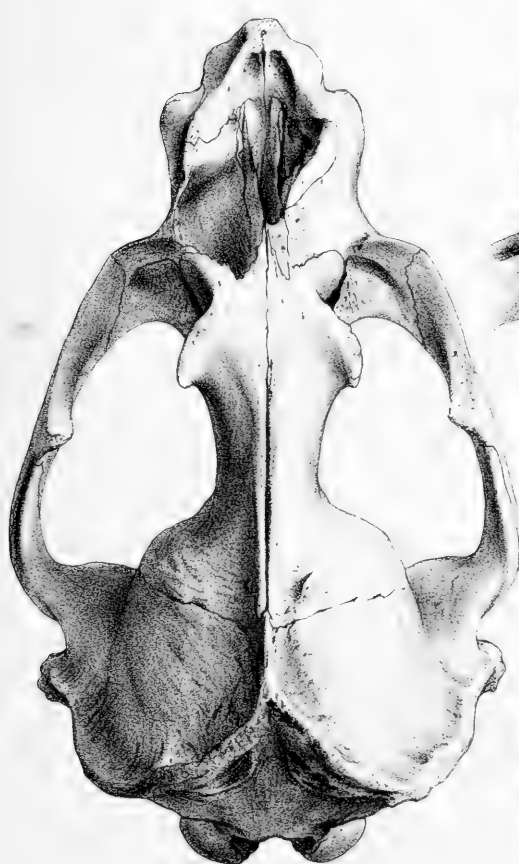
Minnesota Bone Imp.

Enotaria schisthyperbæa.





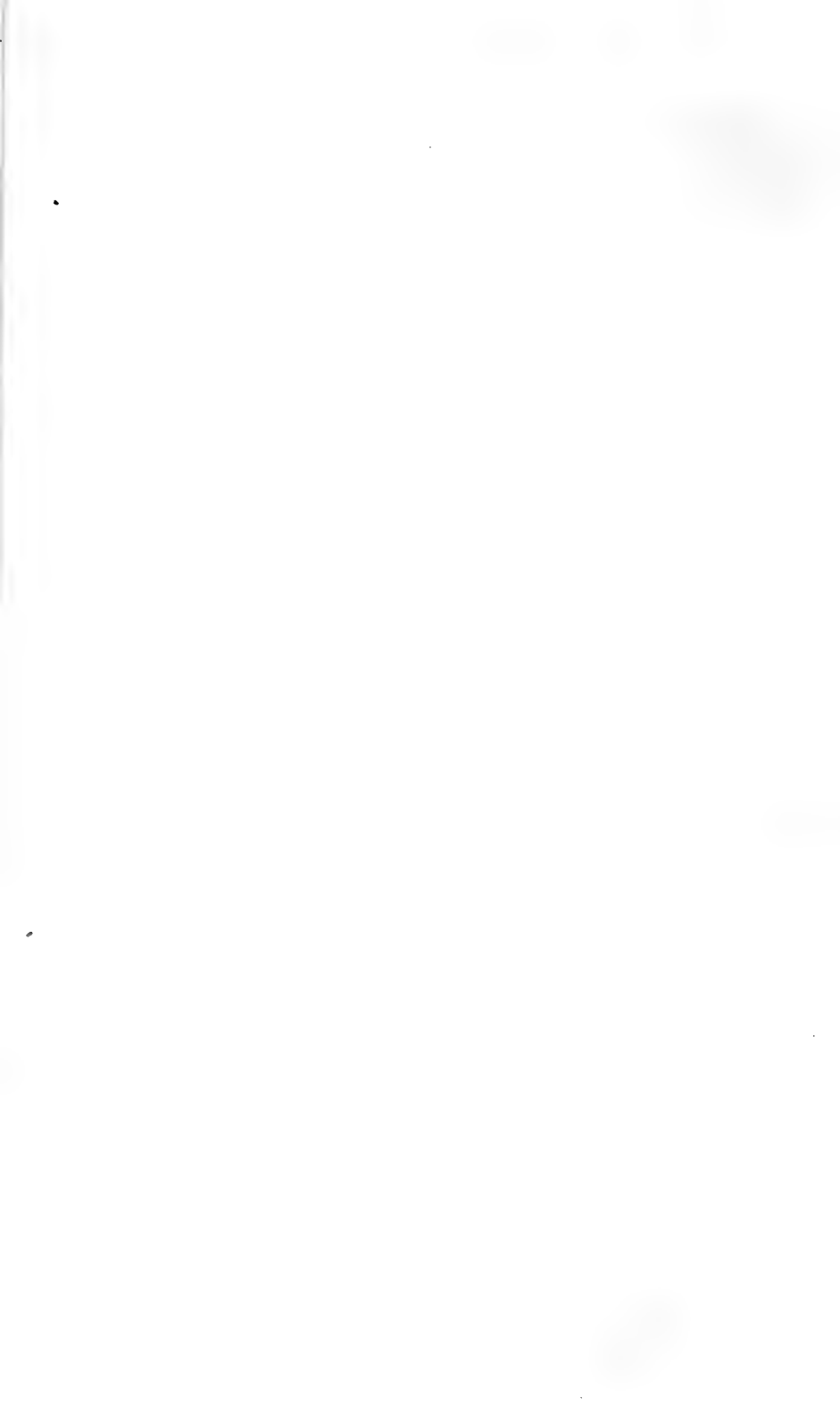
1489.C.

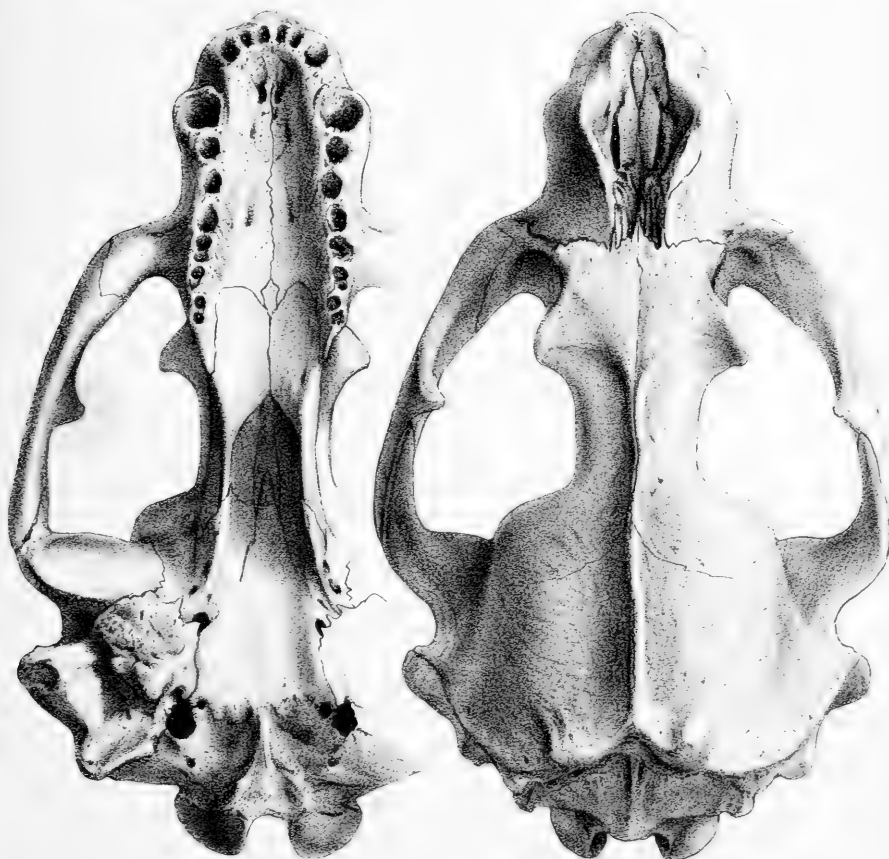


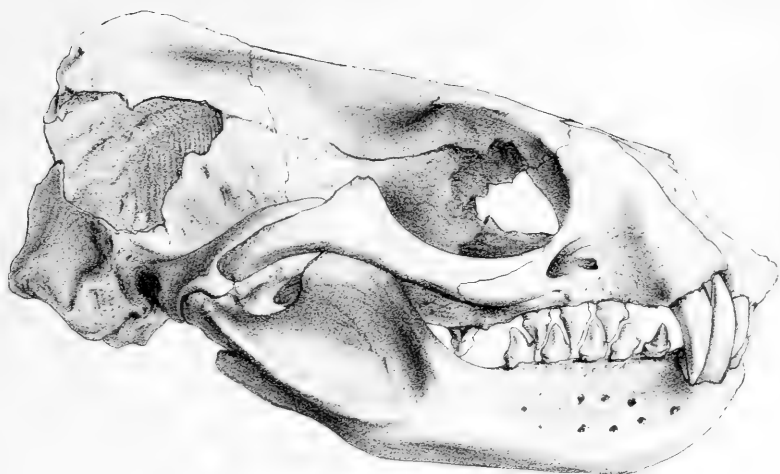
G.H.Ford & C.L.Griesbach.

Mintern Bros. imp

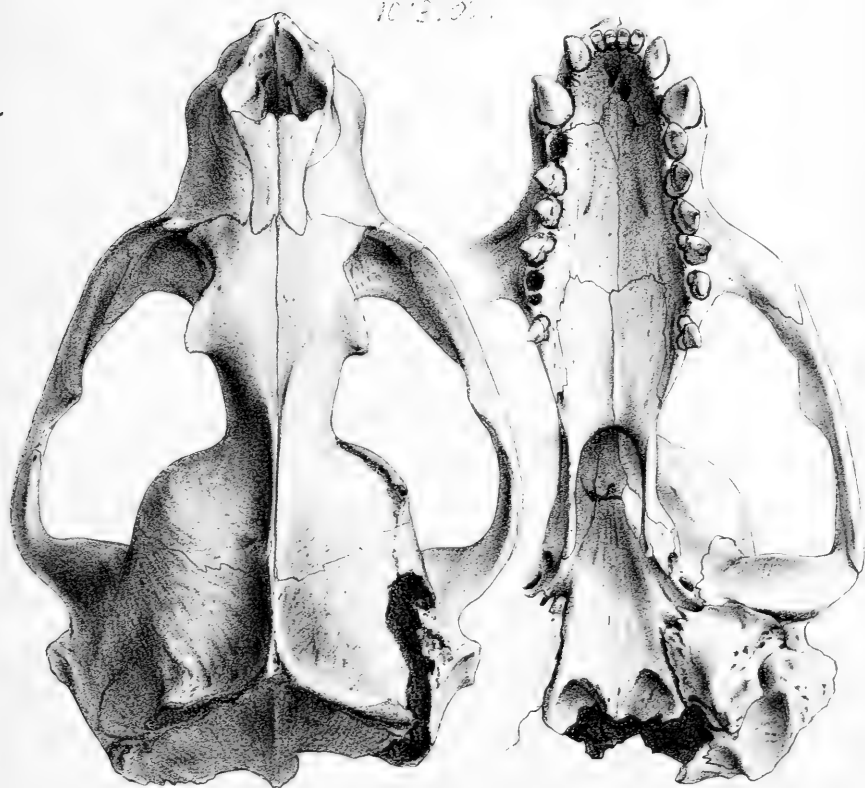
Euotaria cinerea.
New Zealand







10'2.00.

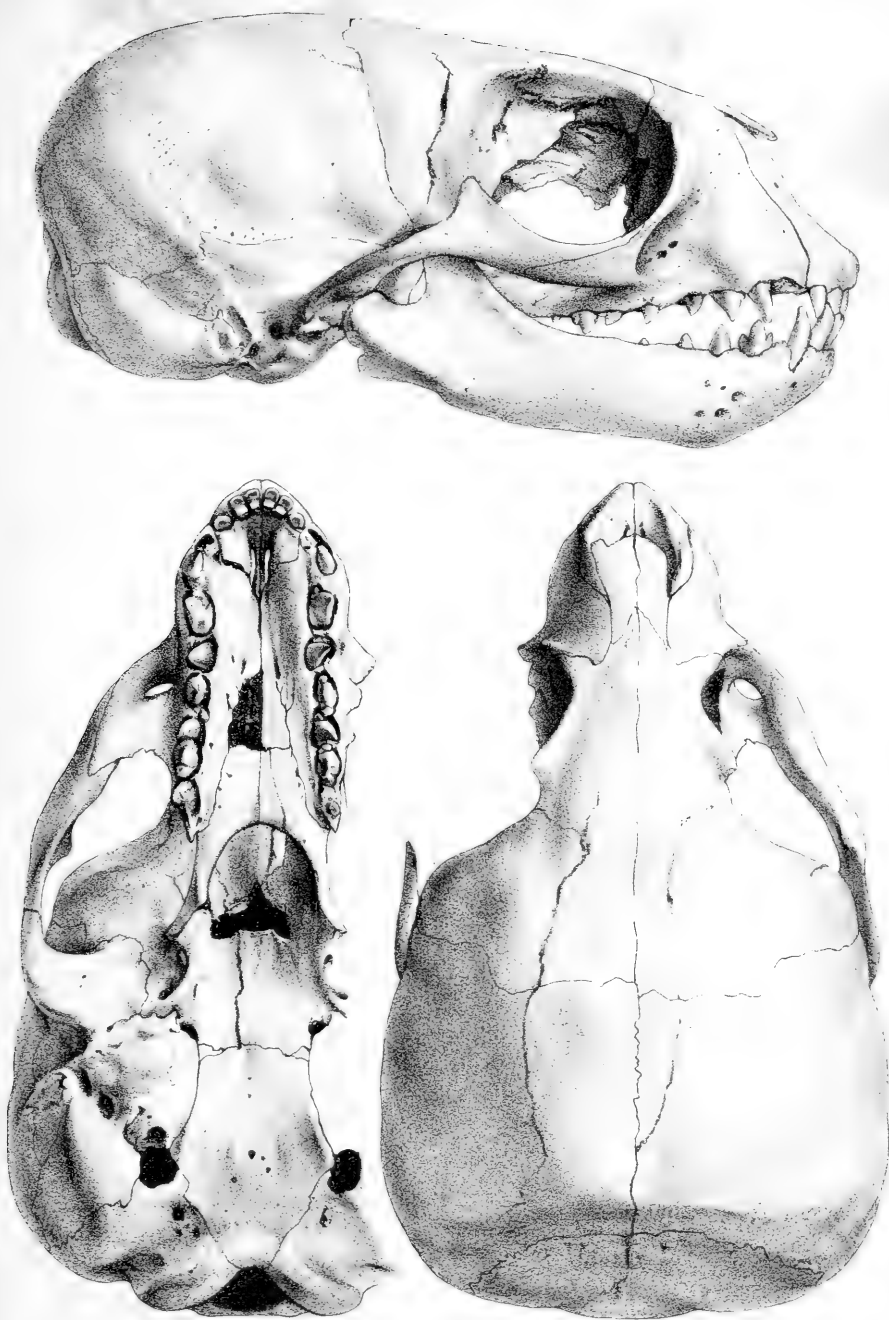


G.H.Ford & C.L.Griebach.

Mintern Bros. imp

Euotaria nigrescens.
Falkland Islands





1013c.

W. H. & C. L. Griesbach.

Monterey, Cal.

Euotaria nigrescens, (junior.)





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